**Recalculating Route and Hunting the Enemy**

The question of the need and the effectiveness of aerial forces in “hunting” Hizballah’s strategic missile and rocket units

**Executive Summary**

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This study deals with the need for and effectiveness of aerial forces in the mission to hunt down Hizballah's strategic missile and rocket units—medium and long-range missile and rocket units aimed at the civilian home front, military targets, and strategic assets. It falls the responsibility of the aerial forces to disable these units’ capacities.

 The motivation for embarking on this study derives from understanding the disparity between the indisputable supremacy of the strongest air force in the Middle East, an air force with fifth-generation capabilities, and on the other hand, its inability to decisively defeat Hizballah, a third-generation organization, the main conventional enemy Israel faces, and to deny its strategic capabilities.

 In practice, the study deals with three main, ostensibly trivial, questions but which give rise to controversial answers in the literature and the practical approaches adopted in past military operations: **Is it necessary to engage in offensive action against Hizballah's strategic missile and rocket units?** **Is it necessary to engage in offensive action by adopting the “hunting” method to disable these capabilities?** **What is the degree of the aerial forces’ effectiveness in this mission and what is the potential for improving it?**

The study clearly illustrates the existing disparity between the threat potential and the lack of a sufficient response, while focusing on the effectiveness of the aerial forces’ hunting mission and the potential for improvement as one of the possible solutions. As such, the study aspires to form the basis of decision-making regarding the scope of the aerial forces’ efforts to dismantle Hizballah’s strategic firepower, and its impact in the broadest sense possible.

The study proves that the response currently being developed in the IDF’s CONOPS (Concept of Operations) for Victory, the selfsame concept that defines what shape and form its force should take, is insufficient, on the one hand, and that there is potential for improvement in hunting Hizballah’s strategic missile and rocket units, on the other.

Such a response requires a different kind of aerial force, one that may only be developed by engaging in a conceptual leap forward, similar to the in-depth process carried out by the Israel Air Force (IAF) following the Yom Kippur War in 1973 to improve its ability to contend with the threat of SAMs (Surface-to-Air Missiles), and in this manner to restore the aerial forces’ ability to achieve decisive defeat.

In order to answer the research questions and establish its claims, the full study relies, inter alia, on studies and articles of aerial warfare theorists, on studies carried out by the Dado Center, on the US CONOPS against ballistic missile threats, the IDF’s CONOPS for Victory, the RAND Institute’s documents and studies, and case studies from the Second World War, the First Gulf War, and the Second Lebanon War, which deal with the efforts to contend with medium and long-range missile and rocket units.

 As part of the study, a preliminary interview was conducted with veteran experts in the IAF to ensure that there is no discrepancy between the open-source material and the actual operational reality, and to focus the findings and the conclusions. In addition, the study was presented to a professional forum.

The full study provides a genealogical review of the development and evolution of the threat at the strategic, operational, and tactical levels. Based on this, it sets out to analyze the need to take offensive action against Hizballah’s strategic missile and rocket units in order to undermine Hizballah’s strategic concept and cause it to abandon this path.

Moreover, it reviews the development of the State of Israel's response to such a threat following the First Gulf War and as a response to the need to contend with the transformation of the Syrian army at the time. It lays out how these operational capabilities were informally incorporated in Israel's security doctrine years later, in the form of the fourth pillar of defense and on the operational level in the form of the development of hunting capabilities. The study also reviews how the IDF’s CONOPS for Victory, which guides the implementation of its force design, attempts to provide a response to the threat. Relying on case studies and critical articles, we analyze the gaps, the challenges, and the sensitivities of the developing response, and the need to continue to adopt action using the hunting method.

 The second part of the study focuses on the operational-tactical layer and discusses the question of what leads to successful hunting by aerial forces, and what leads to failure, and then analyzes this topic using three case studies: the Allied Forces in the Second World War against German cruise and ballistic missiles, the US-led Coalition in the First Gulf War against Iraqi Scud missiles, and the IAF in the Second Lebanon War against Hizballah's short, medium, and long-term rockets. These case studies were selected as representative of conflicts between two adversaries, one of whom has a strong aerial force, while the other utilizes medium and long-range missile and rocket forces as a means to erode the aerial supremacy of the first party.

From the three case studies, it is possible to learn which factors and circumstances contribute to the success or failure of an aerial force against the enemy’s strategic missile and rocket units, and each case will attempt to answer the following questions: How did the aerial force operate? What was the extent of its success? If it did succeed in contending with the missile and rocket challenge, what was the reason behind its success? If it failed to do so, what caused the failure? How did the enemy operate? How did the enemy’s combat style impact the success or failure of the aerial force?

If so, is it necessary to engage in offensive action against Hizballah’s strategic missile and rocket units? Is it necessary to engage in offensive action by adopting the hunting method? What is the degree of effectiveness of Israel’s aerial forces in this mission and what is the potential for improving it?

The study shows that Hizballah is undergoing a process of operational-tactical transformation that is manifested in both its offensive and defensive capabilities. This transformation indicates a strategic transformation that implies a shift from the strategy of attrition and victory by non-defeat to a strategy with decisive victory elements able to generate strong deterrence, strategic sidelining, and potentially even enforcement in the future.

Hizballah’s developing capabilities, in terms of defense, offense, and quantities, enable it to use these weapon systems not only for the purpose of terror and intimidation but also for tactical military purposes—to facilitate methodical strike and destruction capabilities, albeit limited ones. This transformation is a drastic departure that might constitute a significant threat and pose potential strategic damage to Israel, including in the broadest sense of the term if we consider the Iranian nuclear program, and the fact that Hizballah is an Iranian proxy.

 The main shift in capabilities is in the medium and long-range missile and rocket units as reflected in the dramatic rise in precision combined with the procurement of a large quantity of missiles and rockets, of various types, ranges and destructive capacities. However, it is also accompanied by action based on the Anti Access/Area Denial (A2/AD) strategy in the form of air defense and electronic warfare, as well as the disappearance, concealment, and dispersal strategy, including within densely vegetated terrain, underground facilities, and in both rural and urban areas. These offensive capabilities are capable of targeting most of the terrain within the State of Israel, including population centers, military sites, and the state’s strategic installations. The defensive capabilities, in turn, might be able to routinely repel Israel’s aerial forces from the region and, as such, impede their ability to generate pre-operational intelligence and gain a strong intelligence-based grasp of these units, thus impeding Israel’s ability to conduct strikes against them in case of war. In addition, they pose a challenge to aerial forces during warfare.

Consequently, it is imperative to overcome the enemy’s defensive components, both in routine and emergency conditions, to take requisite action to disable its offensive capabilities, particularly its strategic firepower, and, as such, **to disrupt Hizballah’s strategy and restore the IDF’s and its aerial forces’ ability to achieve decisive victory by translating military and technological supremacy into effective military capabilities.**

The developing response in the IDF in the form of the IDF’s CONOPS for Victory does not provide all the necessary building blocks for neutralizing Hizballah’s strategic missile and rocket units. To a certain extent, this doctrine is appropriate for contending with the Hizballah of 2006, but not with the processes of transformation that Hizballah has undergone in recent years.

The doctrine is based on a defensive effort that will never be impregnable and, moreover, one that is being challenged more and more by the enemy by saturation, multidimensionality, and even attempts to impair the defense using both kinetic and soft means. It is also based on ground maneuver efforts that are limited in range and thus limited in terms of its impact on the strategic missile and rocket units that operate from deep inside the hinterland, and in terms of the willingness of the policymakers to launch such efforts due to considerations of the number of losses, their aftermath, and the international implications. Moreover, the CONOPS is based on focused strikes, which, on the one hand, bring to bear the power and devastation of the aerial forces, but, on the other hand, are dependent on precise pre-operational intelligence, one that is currently difficult to obtain due to our strategic repulsion from the region and challenges to our aerial freedom of maneuver. The effectiveness of these strikes may also be questionable as we are dealing with an enemy that is fully aware of this modus operandi and has adapted to contend with such capabilities by way of decentralization, dispersal, and survivability. To all of these we need to add the potential of collateral damage, which might cause severe harm to the international legitimacy of such actions.

 To our mind, in light of the challenges to and the deficiencies in the IDF’s maneuver, strike and defensive efforts, it is necessary to supplement the offensive effort with an additional component in the form of a “**hunting” method** whose objective would be t**o prevent launches and thus considerably reduce the number of missiles and rockets the defense will have to face, the number of rocket/missile attack sirens on the home front, and in this manner to dismantle the very essence of Hizballah's strategy**: **to generate a significant amount of physical damage, including hitting Israel’s strategic installations, as well as undermining the resilience of the Israeli public and the Israeli economy as a result of being confined to secure spaces**.

This strategy comprises capabilities that would enable the IDF to overcome the enemy’s defensive components, to expose the enemy **prior to launch**, including from deep inside enemy territory, to maintain a constant intelligence grasp of the enemy, and to systematically destroy it once the decision is made. **This offensive strategy could constitute a supplementary effort** to the rest of the IDF’s offensive efforts, and even **stand on its own as a backup effort**, should the other offensive efforts fail or not be implemented due to the overall gaps, challenges, and sensitivities described in the full study. In addition, the hunting method could constitute **an offensive tool enabling legitimacy, restraint, and room for the policymakers** to make decisions before resorting to more violent action such as ground maneuvers and air strikes. This is because the hunting method is focused on systematic destruction of the enemy’s launch capabilities via direct, physical precision strikes, with relatively limited collateral damage, similarly to how the air defense array, in limited conflict situations, systematically intercepts any object endangering Israel and thus provides the policymakers with room for restraint in decision-making.

 In order for the hunting method to be effective, the definition of hunting needs to include prevention of alerting the home front by exposing, locating, and maintaining an intelligence-based grasp on the various components of Hizballah’s strategic missile and rocket units, both in routine and emergency conditions, and systematically destroying them, pending the decision to do so, on the ground prior to launch, or in the air, immediately post-launch. This definition means that the aerial forces will operate against the launch squads, the launchers, the missile storage sites, as well as logistic components such as transportation, fuel, etc. They will locate them, and maintain an intelligence-based grasp of them, both in routine and emergency conditions, while taking into account threats of detection, kinetic threats, and electronic warfare, in order to destroy them before there is a need to alert the home front, either by striking them directly them or by intercepting the missile or rocket within enemy territory.

From the case studies, we may conclude that a hunting aerial force would **require intelligence collection capabilities**, in routine and emergency conditions, which enable the generation of relevant intelligence using **loitering capabilities** for continuous collection with a **high resolution**, **high survivability** and/or covert and/or disposable and inexpensive and/or long-distance **collection capabilities** in order to overcome the challenges to freedom of aerial maneuver in routine and emergency conditions. Its units would have to be equipped with **a variety of sensors in order to increase enemy exposure and to identify it across the entire visible spectrum**, including in densely vegetated terrain, underneath or through cloud cover, in underground facilities, and via SIGINT. This would also require **expanding the collection supply area** by way of wide-area persistent surveillance and/or the use of a large quantity of inexpensive sensors to overcome the enemy’s dispersal over a broad terrain, **alongside advanced, exhaustive information processing capabilities** to produce the requisite intelligence in the required period of time.

**It would also be necessary to provide the aerial forces with:**

* **Recourse to ground capabilities in order to increase exposure of a concealed enemy and to sweep enemy forces in relevant areas**.Examples might include: introducing smoke or tear gas from the air into underground facilities, into densely vegetated terrain, and buildings; use of miniature aircraft at above ground altitude such as mini-RPVs, micro or nano-drones to locate launchers hiding inside buildings, and in densely vegetated terrain; operating special forces deep behind enemy lines with RMS (Remotely Manned Systems), etc.
* **Offensive capabilities based on** **rapid closure of sensor-to-shooter loops and smart triggers between sensors and munitions,** within a matter of minutes, **effective and available munitions** for precision strikes on targets in densely vegetated terrain, underground facilities and built-up areas, while reducing collateral damage to a minimum.
* Expansive ROE (Rules of Engagement) to overcome problems of imagery analysis and resolution, subject to international law.
* The ability to limit the launchers’ mobility and reduce their “living space” in order to focus the intelligence collection and offensive efforts, by mining routes and areas in both densely vegetated and open terrain, blocking off routes, destroying possible hide sites, etc.
* The ability to **synchronize between defense and offense in order to focus** the offensive and intelligence collection efforts, which are inherently limited in scope. In other words, to divide the effort to contend with the missile and rocket threat between offense and defense. While hunting systems operate in focused areas to limit the threat to certain areas inside Israel, Israel’s air defense array will focus on defending the rest of the areas.
* Last but not least, **increased combat proficiency** which can be achieved by formulating a complete doctrine, conducting assessments, creating force design plans, providing more training, models, and knowhow, and increasing the overall level of proficiency both at the staff level and in the field.

Only such an aerial force will be able to overcome the enemy’s defensive capabilities in routine and emergency conditions, to produce effective intelligence that will guide the air strikes, ground maneuvers, the launcher hunting efforts and the defense efforts, and will be able to effectively suppress Hizballah’s offensive capabilities, thus striking a fatal blow to its combat strategy.