

The Changing Dimensions of Israel-Hamas Asymmetrical Warfare from Land to Air

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INTRODUCTION

Over the last decade, the world has witnessed scientific and technological developments that have made various applications affordable, available, and easy to operate. In a dramatic change from the past, some have even become off-the-shelf products that are easily purchased and operated. The revolutionary changes in the technology field have larger-scale implications, especially when they reach the hands of militant organizations, which is one of the ground realities in West Asia. In the recent war, we were able to witness a large scale of the Acquisition of weapons by the Hamas as well as Hezbollah and Houthis. Though they always follow Asymmetrical warfare strategies and techniques, this time, we could see new variations in weapons, especially drones and missiles.

Furthermore, specific organizations, such as Hamas, function not only as terrorist groups but also as "terrorilla" armies, blending elements of terrorism and guerrilla warfare. These organizations strategically embed themselves within civilian populations, utilizing them as shields. They exhibit a non-selective approach, targeting both military forces and the civilian population of their adversaries in clearly identifiable civilian settings. Hamas began to invest in developing and producing more advanced rockets, such as the Grad and Fajr-5, which had longer ranges and higher payloads. These rockets were capable of reaching major Israeli cities, posing a significant threat to civilian populations.

Hamas also expanded its tunnel network, using underground passages to smuggle weapons and fighters into the Gaza Strip. These tunnels allowed Hamas to bypass Israeli security measures and acquire more sophisticated weaponry, including antitank missiles and anti-aircraft systems. Furthermore, Hamas began to invest in the training and recruiting of its fighters, establishing military training camps and implementing a hierarchical command structure. This professionalization of its military wing allowed Hamas to carry out more coordinated and effective attacks against Israeli targets. In addition to its military activities, Hamas also focused

on building a social and political infrastructure within Palestinian society. It provided social services, such as education and healthcare, to gain support and legitimacy among the population. This dual approach of armed resistance and social welfare programs helped Hamas solidify its position as a major player in Palestinian politics. Overall, Hamas's transformation from a small terrorist group to a well-organized and technologically advanced military force reflects its adaptability and determination to achieve its goals. While its tactics have evolved, its commitment to armed resistance against Israel remains a central tenet of its ideology. The advancement of technology has significantly expanded the operational capabilities of terrorist organizations. An attack with a distinct technological aspect can have a far-reaching impact due to its psychological implications.

Consequently, it is logical to assume that terrorist organizations, particularly those with more significant influence, would show a keen interest in harnessing technology, especially when it comes to the concept of "the drone revolution," which encompasses the emergence of uncrewed aerial vehicles (UAVs) that have become widely accessible, affordable, and prevalent. Previously, utilizing a remotely operated aerial vehicle necessitated reliance on intricate, costly systems that demanded extensive training. However, recent advancements in science and technology have brought about significant changes, enabling the availability of drones as off-the-shelf products that can be easily purchased from stores or online platforms without the need for prior authorization. While these drones may not possess advanced military capabilities, they adequately fulfil the requirements of various users, including hobbyists, civilian companies, and even specific military units. The drone revolution exemplifies a more prominent trend wherein user-friendly technologies significantly impacting the economic market are becoming increasingly accessible.

Interestingly, a shift is occurring in the defence sector, as military forces are adopting civilian technologies, contrary to the historical pattern of military-developed products trickling down to civilian use. The exponential growth of technology drives this transition towards off-the-shelf products. However, it is important to note that this change benefits states and companies and presents opportunities for adversaries with limited technological capabilities. These adversaries can leverage innovative commercial systems to compensate for their deficiencies in resources and capabilities.

HISTORY

During its initial years and the first intifada, Hamas terrorism reflected its position within Palestinian society. The group's violent activities included kidnappings, murders, stabbings, and the utilization of light weapons. However, as the military branch of Hamas gained prominence, the organization carried out its first suicide attack in the Jordan Rift Valley in April 1993. This

attack, involving explosives, marked a significant advancement compared to their previous tactics, which primarily involved light weapons, Molotov cocktails, and rock throwing. Over time, Hamas deliberately focused on staging attacks using explosives, sometimes employing suicide attackers and employing varying levels of technological sophistication in their explosives or smuggling methods.

In 2001, armed groups from the Gaza Strip, primarily Hamas, began employing high-trajectory fire against Israel. Initially, these attacks involved improvised Qassam rockets and mortar bombs with limited precision and low payloads. However, as time progressed, the range and firepower of these attacks increased due to the development of more sophisticated self-manufacturing capabilities and the smuggling of weapons into the Strip. These actions serve as evidence of a technological and organizational transformation within Hamas. In 2004, Hamas took a further step by transforming its military arm from a terrorist group into an entity with institutionalized patterns of action and a military doctrine. The elimination of senior Hamas members strengthened the external leadership and fostered a close relationship with Iran. As a result, the military wing in Gaza, directly subordinate to the external leadership, began receiving substantial funding and professional guidance from Iran's and Hezbollah's intelligence apparatus.

Following Israel's withdrawal from the Gaza Strip and Hamas's assumption of control, terrorist organizations, particularly Hamas, equipped themselves with arms and intensified their rocket fire at a faster pace than before. Additionally, Israel's withdrawal enhanced Hamas's effective utilization of its underground combat capabilities, as demonstrated in Operation Protective Edge. However, 'Operation al Aqsa Flood,' conducted by Hamas and its partners in Israel on 7 October 2023, appears at first glance to have gone against this paradigm. Home to leading military and defence engineering programs, Israel watched its multimillion-dollar defence system struggle against forms of low-tech warfare. Apart from all these, I specifically intended to study Hamas and its allied powers' air power capabilities, the evolution of Hamas military power, and its future implications. Hamas employs a variety of weapons, including Qassam rockets, mortars, more significant rocket types, and even underwater drones targeting Israeli ships or oil platforms. While Hamas may not possess the advanced technology and highly skilled personnel that the Israeli forces have, their effectiveness on the battlefield lies in their ability to quickly and inexpensively produce and acquire a wide range of improvised weaponry. This includes rockets, mortars, explosives, antitank guided missiles, and shoulder-launched anti-aircraft missiles (MANPADS). Rather than focusing on the quality of these weapons, Hamas prioritizes quantity and the ability to evade detection by their neighbouring countries.

According to Miguel Miranda, the founder of the Southeast Asian monitoring service Arms Show Tracker, Hamas has managed to amass a surplus of small arms and light weapons through their logistical efforts and support from Iran. For instance, they have obtained large quantities of

Norinco Type 56-1 automatic rifles, which are often seized from boats en route to Yemen. Additionally, Hamas has access to an abundance of RPG-7s and their derivatives, such as the Chinese Type 69, thanks to support from Iran. Propaganda materials released by Hamas also indicate that they can manufacture tandem warheads for their RPG-7s, which are designed to penetrate modern tank armour and are based on a Russian design. Overall, Hamas relies on its ability to swiftly and inexpensively acquire a diverse range of weaponry rather than solely relying on advanced technology or highly accurate weapons. This allows them to maintain a significant arms stockpile and pose a threat to their adversaries despite their technological disadvantages. Hamas possesses a substantial quantity of small arms and light weapons in the first category. This surplus is a result of their logistical efforts and support from Iran. A significant portion of Hamas' arsenal consists of short-range rockets known as Qassam, named after the Hamas armed wing. These rockets have an approximate range of 6.2 miles but are known for their unpredictable flight paths, sometimes resulting in unintended landings within Hamas-controlled territory. In terms of medium-range weaponry, Hamas is reported to possess rockets based on Russian and Iranian designs that can travel up to 25 miles, reaching as far as Tel Aviv.

Additionally, they have an assortment of Russian Grad projectiles with a trajectory of twelve miles. Rockets with the most extended range can reach even further distances, potentially reaching Jerusalem and Ben-Gurion Airport. These rockets include the M-75, a locally adapted version of the Iranian 333 mm long-range multiple-launch rocket system. Another rocket is the homemade R-160, which can carry a warhead weighing 130 pounds.

Additionally, there is the J-80 rocket, developed in 2014 with a range of at least 50 miles. Israeli officials have reported instances where missiles have landed as far as 75 miles away from their initial launch point. In recent times, Hamas has introduced a new type of suicide drone called the "Shahab," which bears a striking resemblance to the Abadil-2 drone manufactured in Iran. This particular drone, often categorized as "loitering munitions," can hover near a designated target and subsequently explode upon impact.

Furthermore, Hamas operatives have an assortment of firearms, including modified AK-47s resembling those of Soviet origin, rocket-propelled grenades, long-range sniper rifles, and heavy machine guns. Notably, they have acquired Iranian-produced rifles, such as the Sayyad, which boasts a wide-ranging .50 calibre ammunition. There have been reports indicating that the militants may also possess replicas of Chinese machine guns.

Regarding their tactical approach, Hamas has heavily relied upon the utilization of booby traps and suicide bombers. Additionally, they have adopted an illicit strategy of disguising themselves in Israeli Defense Forces (IDF) uniforms and utilizing potentially stolen Israeli military vehicles.

This deceptive manoeuvre aims to create confusion and further their objectives. However, the exact number of rockets in possession of Hamas varies significantly, with experts estimating it to be somewhere between five and twenty thousand. In addition to missiles, Hamas has also acquired a substantial number of mortars and Russian-made, laser-guided antitank missiles known as the Kornet. These missiles are referred to as the AT-14 Spriggan under the NATO designation in the Western world. Their asymmetric strategies aim to confront opponents with different weapons, displaying irrationality and asymmetry in their resistance movements. , The world is witnessing the spillover effect of the Israel-Hamas war as it is escalating into other areas as well, especially in the maritime domain of energy security. The Israel-Hamas conflict and the current asymmetric air power capabilities lie in the evolving nature of technology and its impact on warfare. However, the rapid advancements in military technology, particularly in precision-guided weaponry, drone technology, and air defence systems, have significantly altered the dynamics of the conflict. The changing landscape of warfare due to technological advancements necessitates a re-evaluation of the strategies, tactics, and humanitarian implications concerning air power in the Israel-Hamas conflict.

However, the ongoing conflict between Israel and Hamas has once again brought to light the asymmetry in air power and military capabilities between the two adversaries. The asymmetrical warfare between Hamas and Israel revolves around the complex dynamics and challenges stemming from the use of irregular tactics and power disparities between the two entities. It involves analyzing the impact of asymmetric capabilities, including rocket attacks, guerrilla warfare, and terrorism, employed by Hamas against the conventional military of Israel, leading to cycles of violence, humanitarian crises, territorial disputes, and challenges in achieving long-term peace and stability in the region. This disparity has been a defining factor in the conflict's dynamics, reshaping the warfare landscape and profoundly impacting civilian lives. Israel, equipped with a modern air force boasting cutting-edge technology and superior firepower, holds a decisive advantage in aerial capabilities. With advanced fighter jets, precision-guided missiles, and a sophisticated air defence system, Israel can conduct high-precision targeted strikes and defensive operations. These capabilities allow for surgical strikes aimed at military targets, theoretically minimizing civilian casualties.

On the other hand, Hamas, designated as a terrorist organization by Israel and several other nations, lacks sophisticated military technology and air defence systems. Instead, it resorts to unconventional tactics, including rocket attacks launched from within densely populated civilian areas. These rudimentary rockets, while significantly less accurate and robust than Israel's precision-guided weaponry, still pose a threat to Israeli communities, albeit to a lesser extent. The consequence of this imbalance is starkly evident in the civilian toll. Despite Israel's efforts to

minimize collateral damage through precision strikes and warnings, civilian casualties occur, prompting global outcry and humanitarian concerns.

Meanwhile, Hamas's use of civilian areas for launching attacks puts its population at risk and exacerbates the human cost of the conflict. The impact of asymmetric air power extends beyond the immediate casualties. Infrastructure damage, psychological trauma, and long-term societal implications further exacerbate the already volatile situation. The destruction of vital infrastructure such as hospitals, schools, and residential buildings deepens the humanitarian crisis, making it increasingly challenging for affected communities to recover. Resolving this enduring conflict requires addressing the root causes while acknowledging the complexities of the power asymmetry. International efforts aimed at de-escalation, diplomacy, and humanitarian aid play a crucial role in mitigating the impact of the conflict. Moreover, exploring avenues for dialogue and peace negotiations remains essential for a lasting solution.

In conclusion, the asymmetric air power and military capabilities in the Israel-Hamas conflict highlight the ethical, humanitarian, and strategic challenges faced in modern warfare. Addressing these disparities and their consequences is crucial in seeking a sustainable and peaceful resolution to this longstanding conflict.

SIGNIFICANCE OF ASYMMETRICAL WARFARE

Asymmetrical warfare plays a crucial role in the Israel-Hamas conflict, as it involves conflict between opposing forces with vastly different capabilities and strategies. In this context, Hamas, an Islamist militant group, employs unconventional tactics to challenge Israel's superior military power. These tactics include guerrilla warfare, rocket attacks, and terrorist strategies, which aim to inflict damage and disrupt Israel's military operations. By utilizing these asymmetrical methods, Hamas poses complex challenges to Israel's conventional military strength, as it forces them to counter threats from non-state actors like Hamas. Unconventional warfare, which deviates from traditional military approaches, is employed by Hamas to counter Israel's military superiority. This includes launching rocket attacks from civilian areas, utilizing suicide bombings, and engaging in asymmetric tactics. The significance of asymmetrical warfare in the Israel-Hamas conflict highlights the difficulties faced by both sides in navigating the complexities of modern warfare. Non-state actors, like Hamas, employ unconventional means to confront technologically advanced military forces, resulting in a prolonged and challenging conflict with broader geopolitical implications. The ongoing Israel-Hamas conflict intensified since 7 October, unveils critical insights into the broader implications of missile defence strategies. Notably, the traditional interplay of Hamas rocket attacks and Israel's Iron Dome responses has been accentuated by the synchronized engagement of advanced missile defence systems like Arrow and David's Sling, marking a historical integration. The escalating missile

threats have drawn attention from the Pentagon, leading to the active involvement of American missile defence assets. The collaborative use of Israeli and U.S. missile defence systems signals a shared concern for the potential expansion of hostilities. The deployment of integrated air and missile defence technology has proven instrumental in limiting civilian casualties and mitigating the risk of direct conflicts involving the United States and Iran. The conflict's unique aspects include the unprecedented volume of Hamas rocket attacks, surpassing previous norms and challenging the efficacy of the Iron Dome.

Since the conflict started, Hamas has used its latest rocket, the Khaibar M-302. This rocket has a range of up to 100 miles, allowing Hamas to target cities that were previously unassailable for the group. Aside from M-302, Hamas has a plethora of other rockets of various designs. The Israeli Defense Force estimates that Hamas has a total arsenal of about 10,000 rockets in Gaza. They have a collection of missiles like Qassam Rockets, Grad Rockets, WS-1E, Fajr-5, Khaibar M-302, etc. Hamas and other allies in the region heavily rely upon air strikes and missile defence systems to strike down opponents like the Mutabar-1 short-range air defence system, Thermo Baric Rockets, etc. Hamas, for the very first time, used Paragliders installed with weapons and cameras. Hamas recently debuted Shahab's Suicide Drone replica of the Iranian-made Abadil-2. Also referred to as loitering munitions, this weapons system can linger near a target and then detonate on impact.

Above all, Hamas retains a collection of guns, including modified Soviet-styled AK-47s, rocket-propelled grenades, long-range sniper rifles, and heavy machine guns, AM-50 Sayyad. Traditionally, Hamas always followed a guerrilla warfare strategy, which can more or less be categorized as Unconventional Warfare or Asymmetrical Warfare. Without access to an arsenal typical of a state, including tanks and jet fighters, the Palestinians will continue to opt for an asymmetric strategy, using terrorist attacks against the stronger party in the strategic equation. In the name of tactics, Hamas has relied on booby-traps and suicide bombers and even adopted the illicit tactics of donning IDF uniform and moving in likely stolen Israeli military vehicles to create confusion. Acquisition of weapons and other arms is not a crime. Still, it is used against other countries for their existence as a crime. When it comes to the context of West Asia, it is very crucial because the inherent hatred in the minds of both Jews and Arabs is the core reason both do not accept each other. In addition to it, all the other Muslim countries solemnly hate the existence of Israel as the only Jewish nation in the world in that region. In other words, we can quote this: Hamas being a militant group that has run Gaza since 2007 and does not recognize Israel's right to exist, has parlayed the arsenal into an increasingly lethal threat, as seen in the most recent upsurge of hostilities with the Israeli military. Ideologically, Hamas opposes the recognition of Israel and is committed to its destruction-Politicide.

Moreover, Israel is not just raging war against Hamas as a single entity; instead, Israel is engaged with the entire verticals of the so-called Axis of Resistance, and Hamas is one among them. At the same time, while comparing it to the previous wars, particularly this year, the possession and use of weapons from the side of Hamas and its allies was comparatively high in number. Mainly, Hezbollah's arsenal includes roughly 150,000 offensive rockets and missiles, including ballistic missiles, cruise missiles, and drones. On the other hand, Iran has a highly sophisticated stockpile of short-medium and long-range missiles capable of delivering nuclear warheads to Israel and beyond. Additionally, the involvement of Hezbollah to the north and the Houthis to the south, both backed by Iran, introduces a more sophisticated threat. Israel's multi-layered missile defence infrastructure, encompassing Iron Dome, David's Sling, Arrow, and Patriot systems, has been fully utilized, showcasing its effectiveness against diverse and unprecedented challenges. The historical debut of Arrow against long-range ballistic missiles from the Houthis and David's Sling's collaboration with Iron Dome in countering Hamas rockets. The simultaneous operation of these systems reflects an unprecedented defence strategy.

Moreover, the U.S. naval forces actively engage in missile defence operations against threats targeting Israel, highlighting the interconnected nature of conflicts in the region. Secretary of Defense Lloyd Austin's distinction between counterattacks in Syria and the Israel-Hamas conflict underscores the Pentagon's apprehension about the potential for a wider regional war. The ongoing missile defence dynamics not only protect Israel from immediate threats but also serve as a critical case study with implications for regional security and the involvement of global actors. The study sheds light on the evolving nature of conflicts and the strategic importance of integrated missile defence systems in navigating complex geopolitical challenges.

CONCLUSION

The ongoing conflict in Israel and Gaza has underscored the growing necessity for missile defence technology in safeguarding civilian lives and deterring large-scale offensive attacks, regardless of whether the situation escalates into a broader war. The United States and Israel are actively enhancing their anti-missile capabilities, including advancing laser technology and integrating American missile defence systems. Israel has made significant progress in developing laser missile defence technology called Iron Beam, although it has not yet put this equipment into operation. The cost of intercepting a single rocket using the Iron Dome system, which is currently in use, amounts to tens of thousands of dollars for the Israeli government. In contrast, the estimated cost per interception using Iron Beam is only \$3.50. The United States has also been working on similar technology but has not yet been deployed in operational environments. One remarkable aspect of Israel's current conflict is the coordinated and integrated use of multiple levels of missile defence technology. While the United States previously employed multiple missile defence systems in a harmonious manner, such as during the THAAD-Patriot

engagement in the United Arab Emirates last year, no U.S. engagements have reached the scale and consistency of Israel's demonstrated capabilities since 7 October. Following Russia's aggressive use of missiles in Ukraine, the United States and its NATO allies have been continuously striving to enhance their integrated air and missile defence (IAMD) systems. The IAMD system connects all available radars and shooters to a central command system, enabling efficient and effective engagement of aerial threats based on the information provided by any radar. The United States has been dedicated to developing the IAMD system for several years, and Israel's demonstration may catalyze further U.S. efforts and investment in this area. The future of the conflict in Israel and its neighbouring territories is ambiguous. However, missile defence continues to be a primary concern for both Israel and the United States. The proficient utilization of Israeli and American defence systems holds the capability to discourage a devastating war that could result in extensive instability throughout the region. Apart from the strategic significance of missile defence in the ongoing conflict, the incorporation and efficient application of missile defence technology safeguard the invaluable resources of civilian lives. Along with this, significant technological changes have also impacted the conflict and, most importantly, security.

The utilization of off-the-shelf technologies by both armies and sub-state organizations, including terrorist groups, poses a significant security concern. For instance, Hamas has demonstrated adaptability by altering its methods and employing various technologies to fulfil its objectives. Notably, Hamas has showcased its capability to utilize advanced off-the-shelf products like drones and more sophisticated means. However, despite these capabilities, several factors limit the extensive use of advanced technologies. These factors partially explain why Hamas predominantly relies on primitive methods such as kites and balloons.

Nevertheless, this does not imply that Israel can afford to disregard the threat posed by terrorist organizations employing drones and other off-the-shelf products. On the contrary, these organizations' capacity to utilize diverse technologies will only increase alongside technological advancements. Consequently, nations, including Israel, that face such threats must take proactive measures. This entails implementing regulations and countermeasures to prevent and disrupt the Acquisition and development of drones and model aeroplanes, whether through government oversight or restrictions. Simultaneously, it is crucial to comprehend the underlying factors that restrain the extensive use of advanced technologies and explore how to leverage them effectively in countering the vast array of methods and means employed by terrorist groups.

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