A Multi-Arena Missile Attack that Disrupts Israel's Defense and Resilience Pillars

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The primary and most severe conventional military threat facing Israel today is a missile attack and aerial munitions aimed at strategic targets—civilian and military—deep inside Israeli territory. Given the adversaries' buildup of attack capabilities, Israel's defense establishment has formulated a comprehensive defense doctrine, which should provide an effective, resilient, and continuous response to any threat—strategic or tactical—to the State of Israel. The threat profile described in this chapter is based on the current trends in developing attack capabilities among Israel's enemy states, mainly Iran and its proxies, and it could escalate, due to a situation in which the Israeli defense system is not prepared and has exhausted its capabilities.

Background: The Growing Threat of Precision Capabilities and its Implications

In recent years, the technological and military capabilities of Israel's conceivable adversaries, whether states, such as Iran and Syria, or terrorist armies, such as Hezbollah, Hamas, Islamic Jihad, and Shiite militias (the latter in the northern arena), have undergone tremendous change. In addition to having non-precision missiles, surface-to-surface rockets, and missile systems, they have developed and are now employing advanced technological capabilities, which improve the precision capabilities of the weapons aimed at Israel.

Two processes have accelerated this trend. First, the existence of advanced technology that is accessible, available, and cheap enables the installing of advanced precision capabilities into an array of attack weapons: ballistic

missiles, cruise missiles, precision coast-to-sea missiles, tactical surface-to-surface missiles, surface-to-surface rockets, unmanned aerial attack vehicles (UAVs), smart bombs launched from the air, precision-guided missiles launched from the ground, and more. Second, the operational experience acquired by Iran and its proxies in the fighting in Syria, Iraq, and Yemen and having to defend against Israeli aerial attacks in the ongoing campaign in Syria below the threshold of war—known as a "confrontation between the wars"—accelerated the development of the adversaries' offensive capabilities as well as their protective and defensive capabilities. Operational experience has proven beyond all doubt that using precision weapons, guided or autonomous, are advantageous, alongside employing advanced air-defense systems that can intercept both launch platforms and precision-guided munitions (which Israel possesses) that are launched from the air or from the ground.

The significance of this "precision revolution" is a dramatic change in the future battlefield. Firing several precision-guided missiles is much more effective than the indiscriminate firing of dozens or hundreds of artillery rockets and missiles. The adversary's ability to achieve an image of victory, following damage to strategic sites or to symbols of government within the State of Israel could create a new "balance of horror." Precisely hitting strategic sites or infrastructure would have destructive consequences on the continuity of functioning of Israel's military during wartime, on Israel's economic resilience, and on the sense of security and social resilience among its citizens. Israel has worked hard to prepare its air defense system and the Israeli home front for the strategic change of this threat, but creating the response is insufficient. The state avoids exposing the enormity of the risk in order to maintain deterrence, to sustain the public routine and daily life, and to preserve the calm during normal times. Nonetheless, Israel must win the competition with its adversaries in their development of attack and disruption capabilities and in its own response in both the offensive and defensive spheres. In addition, Israel has to prevent its adversaries from building up their capabilities, which reduce their motivation to implement the threat and diminish Israel's relative advantage.

While Israel has invested considerable resources during the past three decades in developing a multi-layer air defense system, its adversaries have monitored the development of Israel's capabilities and are attempting

to outmaneuver and overpower the IDF's air defense systems by eroding them on three levels:

1. Saturation—firing salvoes of rockets/missiles at the same time from different arenas
2. Technological innovation—acquiring missiles with multi-projectile warheads, cruise missiles, autonomous munitions, attack drone swarms, and so forth
3. Staying power—acquiring tens of thousands of missiles, rockets, and UAVs that are launched in continual barrages over many days of fighting.

The adversaries' increasing acquisition of a large quantity and array of offensive weapons make it difficult for Israel's air defense system to function effectively, to discover the trajectories of the most threatening munitions, and to intercept them. Combined barrages would make it difficult to distinguish between precision-guided missiles and other missiles and rockets, and by saturating the salvoes, Israel's adversaries could try to deplete the Israel's stock of intercepting missiles in the early stages of the war. Consequently, in practice, there is already an arms race between the adversarial attacker and Israel as the defender—in which Israel starts off in an inferior position for two reasons. First is the gap in costs. The development and production of missiles and rockets is much cheaper in the grand scheme than the development and production of air defense systems and interceptors. The second reason, which heavily influences the first, is the gap in the level of sophistication between the various threats and the technological demands of building interception systems. In addition, the capabilities being developed by the world powers—especially Russia—must be considered, such as hypersonic, cruise and ballistic missiles with trajectories that are difficult to predict in advance, making them difficult to intercept. These could ultimately also reach our region.

The Technological-Operational Response

The response to these developing threats is in constant competition with the buildup of the adversaries' offensive capabilities. As written in an article in the Israeli military journal *Maarachot*, the defense technologies and development programs of all air defense systems are extremely complex. Given their sophistication and cost, they place a heavy burden on the defense budget and take resources away from developing offensive capabilities and

from building up the maneuvering land power, both which are essential for quickly defeating the enemy on the battlefield. The defense industries, which believe in the development, are at the forefront of global technology in their fields. Nevertheless, currently, all the interception systems are based on a similar principle of kinetic interception, which is achieved either by the interceptor precisely hitting the target or by passing close to the target and destroying it with a timed explosion that hits its warhead. Regardless, ensuring the success of kinetic interception requires the development of functioning, sophisticated, and expensive interceptors and ground control systems that are completely immune to disruptions and cyberattacks.[1]

Israel has developed a multi-layered air defense system. Each weapons system initially aims to counter a different group of threats: The Iron Dome was developed against short-range rockets; the David's Sling was developed against medium-range rockets and missiles, including cruise missiles; and the Arrow System developed against medium- and long-range ballistic missiles launched toward Israel from distant countries. This is how the most basic level of multi-layered defense is built, with each weapon that could be launched at Israel having a designated response. However, this approach does not provide an effective response to the diverse advanced threats, especially in a combat environment that has multiple and various munitions, attacking simultaneously from different arenas. In addition, it does not fully utilize the capabilities of the air defense system.[2] Israel also has improved attack capabilities, which can accurately strike the adversary's launch systems and destroy its command and control systems. To this end, accurate and relevant intelligence is essential for operations, in addition to functioning and undisturbed control systems that properly utilize the IDF's offensive capabilities.

The Threat Profile

The threat profile presents an extreme scenario that is intended to highlight the vulnerabilities of the Israeli response. The basic assumption is that Israel's enemies, especially Iran, are aware of Israel's vulnerabilities and gaps in the defense capability of its home front and are focusing their efforts to be able to conduct a long, multi-arena campaign by attacking sites essential for military and civilian functional continuity. The objective is to damage Israel's functioning, disrupt its combat capabilities, weaken its economic

and social resilience over time, and present an image of victory that would influence Israel's public consciousness.

Statements by senior Iranian figures and by their main ally, Hezbollah's Secretary General Hassan Nasrallah, as well as media reports from the past few years reveal a little about the intentions and operational capabilities that Iran and its proxies can pose for Israel in the threat profile discussed here. At the beginning of 2019, during a live broadcast marking the fortieth anniversary of the Islamic Revolution, Iran revealed the Hoveyzeh—an all-weather, surface-to-surface cruise missile with a long range of 1,350 km—named after a city in the Khuzestan Province that was almost completely destroyed during the Iran-Iraq War and is considered a symbol of bravery and sacrifice. The missile was part of a large exhibition of more than 300 advanced weapons and technologies (missiles, UAVs, munitions, aircraft, and ships) produced by Iran's military industries. Iran's defense minister, Amir Hatami, presented the missile, which cruises at a low altitude and has precision navigation systems. It is launched at short notice and has great destructive capability. He said that the cruise missile had been successfully tested at a range of 1,200 km and accurately hit its target. He also discussed the next generation of cruise missiles—the Soumar—with a range of 700 km and reportedly stationed in western Iraq, enhancing Iran's attack capabilities. In parallel, the deputy commander of the Revolutionary Guard, Hossein Salami, warned in an interview with Iran's state television that "if Israel continues to provoke war in the region, this will lead to its destruction. Israel's capabilities do not even come close to our Operation Jerusalem (Operation Bayt al-Muqaddas) . . . (Israel) will be completely erased before the United States can help it."[3]

A year earlier, in February 2018, the Lebanese website Dahieh, which is identified with Hezbollah, posted an article claiming that President Bashar al-Assad of Syria had "recently" rejected Israel's demand—conveyed via Russia's President Vladimir Putin—to remove some 70,000 Iranian long-range missiles stationed throughout Syria and aimed at Israel; he even declared that the Syrian Army and Hezbollah would jointly wage a missile war against Israel. The article noted that Iranian experts were prepared to fire these missiles (the Fateh-110 and Zelzal) at Israel from every point in Lebanon and Syria and that Assad had commanded his army to help Hezbollah in order to station missiles and camouflage the launch facilities.

According to the article, the Iran-Iraq-Syria axis was vigorously working on transferring additional missiles from Iran so that Hezbollah would have half a million missiles in Syria within a year and a half, in addition to those already deployed in Lebanon.[4] In a special interview given on the thirteenth anniversary of the outbreak of the Second Lebanon War, Nasrallah said that his organization had diverse offensive capabilities, including infantry and drones, and that Israel has refrained from attacking out of fear that Hezbollah would "send it back to the stone age." He added that invading the Galilee is part of his organization's war plans and that his organization possesses missiles capable of hitting Israel's entire coastal plain and all centers of government, nuclear sites, and ports.[5] Iran's precision and long-range attack capabilities, using a variety of measures—including cruise missiles—were demonstrated in the attack on the Saudi oil facilities in September 2019.[6]

The boasting by Nasrallah and Iran's leaders do not take into consideration Israel's efforts to inhibit or prevent Iran's buildup in Syria and Lebanon, such as Operation Northern Shield, which uncovered and destroyed the tunnels that Hezbollah had dug so its special forces could enter Israel and take over communities and army bases.[7] At the same time, Israel undoubtedly faces a severe threat that requires its defensive system to provide almost a complete response by successfully intercepting every missile launched toward Israel, especially if suspected of carrying an unconventional warhead (such as chemical weapons), and to intercept every precision missile aimed at Israel, particularly at a strategic site. Toward Israel's population, the adversary could fire large salvoes of missiles and rockets (precision is not needed when hitting urban areas), and thus a territorial defense that can cope with a inundation of salvoes is necessary. The air defense system, however, is not a replacement for the population being disciplined and having responsible behavior, and the population must enter shelters and protected areas when warned. Severely damaging the home front that results in a large number of civilian deaths would influence the image of victory at the end of the war.

Defeating the nearest circle of enemies (especially Lebanon and the Gaza Strip) could require ground maneuvering deep into territories and launch areas beyond Israel's border. The maneuvering force also requires air-defense in enemy territory as it is susceptible to being hit by precision munitions from both ground and air. This mission requires coping with a realm of unique challenges, primarily due to the difficulties of mobilizing the

defense system in order to defend the forces wherever they are, protecting the system from damage, and maintaining its supplies over time.

Types of weapons that threaten Israel

According to public information, the Shiite axis—led by Iran—includes the following weapons systems:

- Mortar shells, which have ranges of between several hundred meters and 7 kilometers, and have been fired from the Gaza Strip toward the communities near the Gaza border.
- Qassam rockets with ranges of between 3 and 12 kilometers have been fired from Gaza.
- Grad and improved Grad rockets that can reach ranges of between 10 and 40 kilometers. These could be fired from the Gaza Strip, Lebanon, and the Syrian Golan Heights.
- Various Fajr rockets, having a diameter of 220 millimeters and a range of 50 to 90 kilometers, could be fired from Lebanon and Syria, and the M-75 rocket could be launched from Gaza and could reach the Tel Aviv and Jerusalem.
- Zelzal and M-302 rockets, having a range of 100 to 200 kilometers and some with precious warheads, could be launched from Lebanon and Syria.
- Fateh-110 and M-600 missiles, some with precision warheads and with ranges of up to 500 kilometers, could be launched from Syria, Lebanon, and western Iraq.
- Short and medium-range ballistic missiles, with some designed trajectories, could be launched from Lebanon, Syria, and western Iraq.
- It is estimated that Israel's enemies have between 40,000 and 50,000 medium-range rockets and missiles (up to 90 kilometers).[8]
- Shahab-2, Scud B, C, and D missiles with ranges of 300 to 700 kilometers. These could be launched from Syria and northern Lebanon.
- Shahab-3 and Shahab-missiles, with ranges of 1,300 to 2,000 kilometers, could be launched from Iran.
- Advanced cruise missiles with precision homing capabilities. These could be fired from Iran and Iraq.[9]

- Unmanned aerial attack vehicles could be launched from Syria and Lebanon, while attack drones could be launched from the Gaza Strip, including in swarms.
- Coast-to-sea/coast-to-coast missiles could be launched from Lebanon and from Syria's coasts.
- Precision-guided munitions could be fired, operated by ground units positioned near the border and that even penetrate into Israel from the Lebanese border, the Syrian Golan Heights, and the Gaza Strip (via tunnels).

Figure 1. Distance from Iranian missile sites

In effect, the entire State of Israel could be subjected to the danger of precision strikes from one of these arenas, stretching Israel's defense systems beyond the ability to provide effective defense at all the fronts.

Priority targets for attacking Israel

- Precision missiles could be aimed at valuable strategic targets: air defense batteries (in an attempt to neutralize them), storage facilities of toxic materials, power plants, natural gas infrastructure, the Prime Minister's Office, the General Staff building, regional command headquarters, military storage facilities, air force bases, airfields, seaports, army bases, and more.
- Salvoes of hundreds of missiles could target population centers in order to effectively damage Israel's interception system, making it difficult to allocate the interceptors for the precision missiles interception and munitions aimed at Israel's sensitive and essential targets.
- Attack drones could be aimed at valuable soft targets and operated in swarms, making them difficult to neutralize.
- Coast-to-sea missiles could destroy the gas rigs and damage the Haifa Port and the fleet of ships stationed there.
- Cyberattacks could be carried out against critical infrastructure, which is essential for the continuous functioning of the state's main systems and of the IDF's command and control system. In addition, covert activity could take place on social media, creating cognitive damage by sowing terror and fear among the Israeli public and causing them to believe that the state and the army have stopped functioning.

Neutralizing Israel's air defense system

By carrying out combined barrages of all kinds of weaponry from different arenas, Israel's adversaries could make it difficult for the IDF to intercept precision missiles aimed at strategic and sensitive targets deep in Israel that are essential to the continuous functioning of the IDF's command and control system, as well as at infrastructure necessary for the functioning of the home front, such as the supply of water, electricity, and food. The effective use of the adversary's launch resources—for example, of heavy and diverse salvoes—could overcome the IDF's prioritization strategy and quickly diminish its supply of interceptors. At the same time, the IDF's kinetic interception systems could be disrupted and even neutralized via salvoes of missiles with maneuver missiles according to guidance law, which makes trajectory prediction more difficult; splitting warheads; and hypersonic missiles that are extremely difficult to intercept.

Attacks on Israel's airfields, recruitment centers, and command and control centers could disrupt the IDF's defense and recruitment capabilities and even its attack capabilities, whose purpose is to inflict heavy damage on the enemy's launch systems. Even if Israel is able to respond and sow considerable destruction in the adversary's territory and strike its strategic systems, if harm to the home front continues without the IDF being able to fully protect it, it will be increasingly difficult for Israel to create a sense of victory. In addition, rehabilitation will be delayed because the necessary systems and infrastructure no longer function.

Furthermore, the public could lose confidence in the state if the home front suffers serious harm, including a high casualty rate that has not been previously experienced. To this we must add the high cost of both fighting and defending against attacks from missiles, rockets, and the kinds of precision munitions described above. In this kind of scenario, Israel would have difficulty achieving a quick victory, and thus fighting that persists more than two weeks should be expected. This would be an extremely heavy burden on the state's budget,[10] including taking into account the additional damage to lives, national infrastructure, and property, as well as the likely rehabilitation costs, which could lead Israel to budgetary distress, a serious shortage of resources, and increasing dependence on the United States. Should a war erupt following a chain of events that seriously damages Israel's international standing (for example, if Jewish extremists harm the al-Aqsa Mosque), the United States and other Western states might not be so willing to immediately provide Israel with a diplomatic umbrella and with weapons supply while the international community would be paralyzed and unable to impose a quick end to the fighting.

Such a scenario could lead to a critical chain of challenges to the resilience, stability, and even future of the State of Israel. First, it could damage the state's ability to provide for the public's basic needs—water, food, electricity, security, income—and could undermine the public's confidence in the state and its institutions. Second, an inability to end the conflict could cause a series of back-to-back events, like Hamas and the Islamic Jihad in Gaza, could see this as an historic opportunity to pose an existential threat to Israel, such as by organizing mass marches of Palestinians from Gaza and from refugee camps in the West Bank toward Israel's urban centers. If Israel

harms many "returning" Palestinians, Israel would face difficulty receiving support and aid from its friends in the West.

Possible Causes of a Missile Attack

The possibility of a surprise attack on Israel needs to be considered; however, it is more likely that a series of escalating events will motivate the adversary, particularly the Shiite axis led by Iran, to attack Israel with missiles and aerial munitions.[11] Escalation events could include a covert Israeli attack on sites in Iran containing nuclear development infrastructure. This kind of attack would seriously damage infrastructure, Iranian scientists, and others. Even if Israel does not assume responsibility for the attack, Iran's leadership might blame Israel and the United States for executing it, and Iran would promise a powerful response to it, when and wherever it is suitable. Another escalation event could be an Israeli attack on precision-missile assembly sites and storage sites in Syria, Lebanon, and Iraq, which would cause extremely heavy losses to the Iranian Quds forces and Hezbollah operatives. A terrorist attack by Jewish extremists that destroys significant parts of the al-Aqsa Mosque and causes thousands of direct and/or indirect casualties in riots afterwards would also spur Israel's enemies to take action against it.

Figure 2. Critical factors in the development of the threat profile

Conclusion and Recommendations

In this chapter, we presented a threat profile in which a coalition of forces led by Iran implements a combined, multi-arena, multidimensional attack, which could include missiles and UAVs from Lebanon (Hezbollah) and Syria; ballistic missiles from Iran and Iraq; cruise missiles from Iran and Iraq; and rockets, attack drones, UAVs, and mortar shells from Gaza. These coordinated forces could exploit the military capabilities at their disposal to

suddenly launch salvoes of missiles and swarms of UAVs and drones in an attempt to paralyze military and civilian airfields in Israel, command and control posts, the IDF headquarters in Tel Aviv, interception systems, the Prime Minister's Office in Jerusalem, the Knesset, army and intelligence bases, military storage facilities, as well as civilian infrastructure systems essential for the functional continuity of the state, such as power plants, relay stations, and desalination facilities. In parallel, a massive cyberattack on state infrastructure and a cognitive warfare attack on social networks in Israel could occur, sowing fear and disseminating false information to create the impression that the attacks are more destructive than in reality.

If the enemy succeeds in launching large-scale salvoes of hundreds of missiles simultaneously from different arenas (which is a distinct possibility), Israel's air defense would likely have a difficult time coping with the threat. The result would be large-scale destruction—and death in some circumstances—within Israel's population centers. This is a threat profile that could seriously harm Israel's major cities and strategic sites via precision missiles—a scenario that Israel has never experienced—not in the First Gulf War, nor in the Second Lebanon War, nor in Operation Protective Edge. The enemy could increase the harm to the home front by attacking Israel's air defense systems with precision missiles and by carrying out cyberattacks that would damage the functioning of the IDF's command and control, and early warning systems. If the warning system is damaged, it would be difficult for civilians to remain for long in the shelters and protected spaces, and the casualties would likely be numerous.

The threat profile requires the creation of a multidisciplinary Israeli response. In the age of precision missiles and munitions, the development and implementation of a combined defense doctrine is necessary. Instead of a defense system that relies on a single interception method and opportunity against each kind of threat, various systems of interception are needed, which together provide different opportunities against each kind of threat. To this end, Israel's defense system must be strengthened using advanced measures, such as powerful laser-based interception systems, as well as having the capability to intercept a large number of objects using a single interceptor that splits into several small and deadly sub-interceptors. Furthermore, Israel needs to properly calculate the risks of offensive activities that it initiates against its adversaries' capabilities. It must also protect holy and sensitive

sites, mainly the mosques on the Temple Mount to prevent extreme and wide-ranging religious motivation to harm Israel, and ensure the maintenance of freedom of worship at these sites for all religions. In the diplomatic-military sphere, Israel must maintain its special relationship with the United States by taking into account American interests and positively receiving US initiatives, such as advancing a diplomatic process with the Palestinians.

Finally, the home front is a critical weak point in Israel's ability to cope with prolonged military campaigns. Israel's adversaries are intent on harming it mainly in order to cause heavy losses and damage and to neutralize the functional continuity of its military systems and civilian infrastructure. Although Israel actively prepares the home front for war,[12] it is not enough, especially not for the threat profile described here in this extreme scenario, which is based on longstanding trends in the regional threat map. The home front's ability to cope with damage and with multiple casualties requires national solidarity and a sense of justice and confidence in a responsible government that is concerned first and foremost about Israel's future. The consequences of this scenario could lead to the emigration or temporarily leaving of significant segments of the Israeli population, especially those whose presence is essential for rehabilitating the economy, infrastructure, and the special technological capabilities that characterize Israel.

Even though this extreme scenario discussed is dependent upon a series of successes by the adversary and by a number of functional and operational failures by Israel's defense system, the realization of this scenario would likely be lethal, involving direct and indirect negative consequences.

Analyzing the scenario emphasizes the need to address four dimensions that are critical to Israel's future: the enhancement of Israel's defense system; a significant improvement in Israel's ability to utilize its offensive power so that it can effectively neutralize the kind of threats discussed here; greater investment in preparing the home front for the next war, which includes enlisting the sources of strength inherent within the Israeli public; improving the protection and redundancy of essential systems and infrastructures to the functioning of the state; and the strategic need to continue to cultivate Israel's special relationship with the United States.

Notes

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