

## Urban Warfare: The Recent Israeli Experience

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## **Urban Warfare: The Recent Israeli Experience**

### **Abstract**

This article analyzes the evolution of urban warfare tactics, technologies, and approaches in Israel. The article briefly addresses the nature and constraints of modern urban warfare, examines Israel's early experience with urban warfare during the 1982 Lebanon War, and then describes and assesses the development of Israeli urban warfare in a range of wars and operations starting with Defensive Shield in the West Bank, then moving to the Second Lebanon War and then addressing a number of conflicts between Israel and Hamas in the Gaza Strip between 2007 and 2021. This article will also identify a few overarching trends in the evolution of Israeli urban warfare.

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## Introduction

Israel has been engaging in urban warfare for several decades to support counterterrorism and counterinsurgency objectives on various fronts, including the West Bank, the Gaza Strip, and Lebanon. Israel's experience conducting urban warfare has been characterized by a significant evolution in tactics and strategies. Over time, urban warfare took the place of warfare in open terrain as Israel's primary type of warfare, a process that mirrored developments in other parts of the world, including U.S. counterinsurgency efforts in Iraq and Afghanistan and the Syrian Civil War.

This article briefly addresses modern urban warfare's nature and constraints. It examines Israel's early experience with urban warfare during the 1982 Lebanon War, where urban warfare was still a corollary to warfare in open terrain. It then describes and assesses a range of Israel's wars and operations—starting with Defensive Shield in the West Bank and moving to the Second Lebanon War and concludes by addressing several conflicts between Israel and Hamas in the Gaza Strip between 2007 and 2021. Between 1982 and 2021, the Israel Defense Forces (IDF) became increasingly focused on urban warfare as the main air and ground operations arena. The IDF developed specific tactics and technologies designed to provide advantages to enable it to leverage its capabilities more efficiently within the constraints of the urban environment. Additionally, the author will identify a few overarching trends in the evolution of Israeli urban warfare.

## Urban Warfare

Urban warfare, whether in cities or—to broaden the definition to all confined man-made spaces—in forts and castles, has been a feature of warfare since antiquity. Many of the principles recognized as characterizing urban warfare today were largely applicable in the premodern period, except for aerial assets or, farther back in time, explosives. While not exhaustive, John Spencer offers a useful list of eight rules and the major principles of modern urban warfare:

1. Defenders almost always have a tactical advantage, particularly in cities, though this does not imply that they will necessarily succeed at the operational or strategic level of a conflict
2. The urban terrain inhibits the attacking force's ability to use intelligence, surveillance, reconnaissance, deploy aerial assets, and engage the defenders from a distance
3. Attacking forces have trouble achieving the element of surprise as they are monitored by the defending troops, which can remain hidden from the attackers
4. Buildings, particularly those made of steel-reinforced concrete or stone, serve as fortified bunkers from which defending forces can fire upon attacking forces
5. Attackers often use munitions, sometimes powerful ones, to access buildings and deny them to defending forces
6. Defenders have the advantage of comparatively free movement within the city and intimate knowledge of its streets, alleys, and warrens—when not under surveillance or attack by unmanned aerial vehicles or via other means
7. Defenders can build tunnels, arms depots, and a range of other facilities underground and use these to access multiple locations in and around the city. Attackers often have no or little knowledge of these
8. Neither attacking nor defending forces can mass their assets in a concentrated location. The concentration of forces is one of the deciding factors in conventional battlefield warfare in that, historically, the objective of field operations was to concentrate one's force to decimate the enemy's army. The inability to use mass forces has disadvantages for both sides, but if it is the defending force that is an irregular force and the attacking force that is a modern military—which has in the case in many instances of post-World War II modern urban warfare—the technological, numerical, training, and equipment advantages of a modern military cannot, in many cases, be brought to bear as effectively as it can in open warfare. Thus, the modern military force is often forced to skirmish with irregular fighters, with both sides being largely matched because they carry similar types of equipment, and the training advantage that a modern soldier has can be somewhat negated by the knowledge of the terrain afforded to an irregular defending fighter. Also, the irregular defenders usually have a significant

amount of time to prepare their city for conflict, including taking measures such as: Digging tunnels, building ammunition dumps, establishing sniper positions, deploying booby-traps, and planning ambushes.<sup>1</sup>

Since much of modern warfare is asymmetric, irregular forces such as guerrillas and insurgents cannot hope to best their adversaries in warfare on open terrain. and thus, must rely on the advantages afforded by extensive cover, whether in natural environments such as jungles, mountains, deserts, or other locations that are hard to access and control or in cities.<sup>2</sup>

Of course, as noted above, urban warfare is not new. However, even in the modern period, as during World War II, urban warfare was largely no-holds-barred and did not take into consideration in any meaningful way the issue of collateral damage, both in terms of egregious damage to property and especially in terms of loss of life among non-combatants. Hence, for example, in the great urban battles of World War II, such as those of Stalingrad, Warsaw, and Berlin, the city in its totality served as a military target and, therefore, anyone or anything in it was in danger of becoming collateral damage. The same was true of the strategic bombing of cities such as Hamburg, Dresden, and Tokyo during the War. The goal was either to capture the city in ground operations or to massively bomb from the air to degrade its ability to contribute to the war effort and weaken the morale of its inhabitants. Moreover, with the noted exception of the Battle of Stalingrad—which involved the trapping and destroying of German troops in and around the city, the most impactful battles of World War II (Midway, Kursk, Overlord, Guadalcanal, El Alamein, and others) did not occur in urban environments.

Of course, the approach that views a city as a legitimate target for all military activity has not entirely disappeared—witness the current Russian tactics in cities in the Ukraine—but it is largely unacceptable, particularly for democracies, to treat a city full of civilians as essentially one big military target. Modern legal conventions and ethical considerations make it necessary to try and distinguish between the peaceful inhabitants of a city and regular or irregular enemy forces. Of course, the irregular forces are aware of this and thus often masquerade as peaceful citizens to

maximize their tactical advantages and minimize their vulnerabilities vis a vis the invading force.

These new legal and ethical considerations attached to urban warfare have been buttressed by the even newer phenomenon of the Information Revolution and the possession of cell phone cameras in the hands of most inhabitants of a city and access to social media to upload video and photographs of combat and atrocities. In addition, the phenomenon of lawfare in which parties to a conflict, sometimes using cell phone footage, try to initiate legal actions against individuals or organizations plays an increasing role in modern warfare. The problem with close-quarter urban combat in and around the homes and businesses of noncombatants, of course, is that it is impossible to guarantee the safety of noncombatants. This limits the freedom of movement of conventional invading forces and makes them more vulnerable to attack, while civilian deaths and property damage can benefit the irregular defending forces by drawing global attention and ire towards the invading forces. The death of innocents in a city can sway public opinion on the part of the inhabitants in the direction of providing increasing support to the irregular forces and stoke greater hatred towards the invading forces. Hence, urban defenders enjoy a large range of advantages, not just tactically but also in terms of local, national, and global opinion, something that can influence the politics of the invading country as well as its relationships with its allies and trading partners.

The key, then, for a modern military of a democratic state that wants to attack and gain control of an urban environment is to significantly degrade the enemy's ability to conduct operations in the city while minimizing its own casualties while reducing to an absolute minimum the loss of life of noncombatants, and minimizing, to the degree possible, the destruction of property. The invading force must accomplish all of this without turning the masses of the urban population against it in a way that might produce a secondary insurgency. Clearly, accomplishing all the objectives is a tall order and difficult, if not effectively impossible, to achieve all at once. Israel's approach to urban warfare provides a good case study of some of the pitfalls of urban warfare and ways to cope with its challenges.

## The Israeli Experience with Urban Warfare: The Early Years to Defensive Shield

In the early decades of Israel's existence, Arab-Israeli warfare was characterized largely by conventional clashes in open terrain, particularly in the Sinai and on the Golan Heights. At the same time, virtually all of Israel's wars featured some manifestations of urban combat. Examples include the battle of Jerusalem during Israel's War of Independence, Israel's conquest of east Jerusalem, the cities of the West Bank, and the cities of the Gaza Strip during the Six Day War, or the Battle of Suez during the Yom Kippur War. However, most of the fighting in these cases occurred in the streets of the cities and not in or from the buildings themselves.<sup>3</sup>

Despite the fact that urban combat of some kind featured in these wars, most of the military activity and the most important clashes occurred outside urban environments. This began to change with Israel's 1982 war against the Palestine Liberation Organization (PLO) and Syria in Lebanon. In that war, the most serious military clashes occurred during tank battles between Israel and Syria on open terrain in the Bekka Valley. The 1982 Lebanon War nevertheless featured widespread clashes with irregular PLO fighters who primarily fought in cities or the urban environments of large villages.

At that time, Israel's urban warfare doctrine, largely like other militaries, called for encircling, cutting off, and bypassing cities. Furthermore, the Israeli military's traditional emphasis on the use of armor resulted in a shortage of infantry and a resulting reliance on tanks in combat, and these were not thought to be as useful in constrained urban environments.<sup>4</sup> Fortunately for Israel, when it came to dislodging the Palestinians from their strongholds in Beirut, most of the PLO fighters were deployed in the Palestinian refugee camps in more open terrain on the margins of the city where tanks and armored vehicles could operate more easily, and were furthermore easily viewed from the mountains south and east of Beirut, where the IDF had placed its artillery batteries.<sup>5</sup>

The shift in focus to urban combat occurred gradually. After the 1979 peace treaty between Israel and Egypt, the conventional Arab military threat to Israel, which afforded possibilities to concentrate forces on the

battlefield, using combined infantry, air, artillery, and armor assets and deliver decisive victories, albeit sometimes at a high cost to Israeli forces, essentially began to dissipate. Ultimately, the Egyptian decision to pursue peace with Israel effectively negated the Arab option of waging another combined conventional war against Israel. Over time, the weakening of Iraq, owing to its war with Iran and then its defeat at the hands of the United States, removed yet another conventional adversary from the Israeli threat picture. With the signing of a peace treaty between Israel and Jordan in 1993 (though Jordan had not been a real military threat to Israel in decades and secretly cooperated with it), only Syria presented any real conventional threat to Israel—however, Damascus could not realistically take on Jerusalem on its own. With the collapse of Syria in 2011 and the onset of the brutal civil war in that country, the last realistic conventional threat facing Israel evaporated. The Egyptian military is still formidable and will be a major conventional threat in the highly unlikely event that Egypt decides to tear up the long-standing peace treaty and go to war, but, even when under a Muslim Brotherhood-affiliated government (June 2012 to July 2013), Egypt did not demonstrate any real desire to abandon the peace treaty with Israel.

As the traditional battlefield military threat to Israel decreased dramatically from 1979 to 2011 and subsequently effectively disappeared, there was a gradual concomitant rise in the threat from irregular forces—terrorist groups and guerrilla or insurgent forces. These forces were unable to field manned aircraft or even battlefield-grade artillery or tanks in anything approximating the numbers required or capability needed to represent any sort of battlefield threat to the Israel Defense Forces (IDF). Consequently, the only locations in which irregular forces could try and level the playing field with the IDF was in crowded urban environments, where the IDF was unwilling to concentrate its fire and otherwise take full advantage of its conventional capabilities. Indeed, urban warfare partially deprived the IDF of one of its greatest tactical advantages, air support.<sup>6</sup> Consequently, because Israel's current primary adversaries are ensconced, either almost totally in the case of Hamas and other Palestinian groups, or largely, as in the case of Hezbollah, in urban environments, the Palestinian and Lebanese cities and large villages have become Israel's main battlefield—leaving aside the scenario of long-range Israeli air and sea strikes against Iran's nuclear program.



Unlike Arab armies in the early decades of Israel's existence, these irregular forces pose no existential threat to Israel, as a state, but they do, in many ways, pose a greater existential threat to the individual citizens of the State of Israel. Irregular forces can manufacture or smuggle missile and rocket technology, as well as drones, and deploy these against Israeli military and civilian targets. This poses an increasing threat due to continual advances in the technology behind these weapons systems. Israeli citizens in their homes and businesses, are now the targets of explosive projectiles launched by Hezbollah and various Palestinian factions in Lebanon and Hamas, Palestinian Islamic Jihad, and other factions in the Gaza Strip. This was initially a novel experience for Israeli civilians as, under the traditional warfare model that Israel had followed during its conventional wars with the Arab states, the Israeli Air Force dominated the skies above the battlefield and hence, with a few exceptions, prevented Arab aircraft from bombing Israeli cities. Lebanese Hezbollah being far better equipped (with an arsenal of some 150,000 rockets and missiles), trained, and enjoying more mobility in comparison to Hamas or other Palestinian organizations, has come to pose a major threat to Israel's cities, infrastructure, and civilian population.

The response to the outbreak of the Second Intifada in October 2000 and Operation Defensive Shield (March-May of 2002), launched to temporarily retake most of the cities of the West Bank from the direct control of the Palestinian Authority, featured extensive urban warfare. Operation Defensive Shield represented the largest Israeli military mobilization since the 1982 Lebanon War with some 30,000 reservists called up. Most of the fighting was against small groups of Palestinian fighters ensconced in buildings among the civilian population. During the operation, the IDF faced significant resistance, preventing it from utilizing the full range of its air assets or employing concentrated fire from armor and artillery. The ground forces were thus compelled to engage in house-to-house combat to flush out Palestinian fighters. The IDF used Caterpillar D9 armored bulldozers to clear routes and destroy IEDs on the roads and inside buildings, though these frequently caused significant material damage in the areas in which they operated, particularly where the roadways were narrow, such as in the Casbah districts of Palestinian cities such as Nablus.<sup>7</sup> The IDF also employed what were, for it, novel tactics such as blasting through walls to move horizontally or floors and ceilings to move vertically, thus allowing infantry soldiers to avoid stairwells and

avoid exposing themselves to sniper fire or IEDs in the streets and warrens of the cities.<sup>8</sup> This tactic had the advantage of forcing Palestinian fighters out into the streets where they were more vulnerable to Israel's overwhelming advantage in firepower, but it also caused significant physical damage to homes and businesses.<sup>9</sup> The Israeli military also employed large numbers of undercover personnel that masqueraded as Palestinian civilians in order to foil plots, gather intelligence, and make arrests.<sup>10</sup>

In the wake of Defensive Shield, the IDF increasingly came to view a capability to wage effective urban warfare as important and, three years later, it built a 60-acre urban warfare training center at an IDF base in southern Israel, that can accommodate an entire brigade at a time.<sup>11</sup> This training capability came none too soon as, during the 2006-2009 period, the IDF definitively shifted to focusing on urban warfare as a result of The Second Lebanon War (July-August 2006), and those new techniques were then employed for the first time during Operation Cast Lead (December 2008-January 2009).

## The Second Lebanon War and its Aftermath

During the summer of 2006, the Second Lebanon War featured numerous engagements in urban environments within large villages, along with Israeli bombing of Hezbollah positions in southern Beirut and other cities. Unlike classical guerilla tactics, which involve ambushes in which the guerrillas quickly retreat after the attack to avoid being crushed by conventional forces, some Hezbollah fighters in urban environments, as well as in rural outposts, attempted to hold ground for extended periods of time.<sup>12</sup> Hezbollah guerrillas made effective use of urban environments in towns and large villages but, unlike subsequent operations in Gaza, most of the towns and villages that were attacked by IDF forces during the Second Lebanon War had already been evacuated by their civilian inhabitants and thus coping with civilians during ground engagements was less of a problem.<sup>13</sup>

Many viewed Israel's performance during the Second Lebanon War critically, both at the military and the governmental levels, particularly within Israel. Public outrage, stemming from the perceived paltry results of the war at the time, compelled the Prime Minister to appoint a

commission to investigate the war's multiple failures. The Winograd Commission concluded that Israel's poor performance was a combination of the failure of civilian and military leadership, poor preparedness and training, poor intelligence, poor operational doctrine, and an overreliance on air power.<sup>14</sup> Perhaps unsurprisingly, Israel, in coping with the Second Intifada, was focused on Low-Intensity Conflict (LIC) and not prepared for what might be termed guerrilla warfare plus. One of the features of Israel's LIC approach was that time constraints in accomplishing an operation were less of a factor than avoiding casualties among IDF forces or Palestinian civilian casualties.<sup>15</sup> This was essentially the opposite of Israel's past approach to conventional warfare, which involved hitting the enemy decisively to end the war as quickly as possible, given Israel's limited resources.

In 2006, in response to Israeli failures in effectively execute urban warfare during the Second Lebanon War, the IDF revised its approach. Active duty and reserve forces were provided with new equipment (including equipment for breaching buildings), the aforementioned urban warfare training center was built, and there was a greater emphasis on combined arms in the urban environment. Israel increased its procurement of Merkava IV tanks, viewing the Merkava as a more effective troop carrier for coping with anti-tank missiles than normal armored troop carriers.<sup>16</sup> Greater coordination between the Israeli Air Force and ground forces was also emphasized and tactical air control, which had been denied the ground forces prior to the Second Lebanon War on the grounds that it was not needed in LIC urban environments, was re-instated at the brigade level.<sup>17</sup> IDF training emphasis shifted from a three to one ratio in favor of LIC versus high intensity conflict (HIC) to 80 percent of training being devoted to combined-arms HIC training because the military had concluded that it would have to prepare for a 'hybrid' threat in which it would have to deal not only with low-level tactical teams of Palestinian fighters, but also with higher-end 'professional' guerrilla forces such as those of Hezbollah.<sup>18</sup> In this hybrid context, at the lower-end, the IDF had to learn to better exploit unconventional tactics by focusing on disrupting the enemy rather than holding territory, and, on the other side of the hybrid equation, it had to abandon concepts such as 'front lines' or 'rear staging areas' as the battlefield was potentially everywhere in the urban environment.<sup>19</sup>

In changing its doctrine to emphasize urban warfare, the Israeli Air Force had to focus on surgical strikes using accurate and low yield munitions, as opposed to its previous focus on destroying enemy formations on the battlefield. This also necessitated the use of more attack helicopters and unmanned aerial vehicles (UAVs), alongside manned fixed-wing aircraft. The IDF ground forces also had to prepare for urban warfare in a combined arms approach in which infantry advanced in, and along with, heavy and light armored personnel carriers (APCs), tanks, armored bulldozers, and combat engineers. In the case of the latter, the military utilized combat engineers to blast through buildings and neutralize tunnels.<sup>20</sup> One of the lessons from the Second Lebanon War was that the IDF could not rely on infantry alone in urban environments as this could dramatically increase the number of casualties, and hence armor, including tanks, was still essential. In addition, tactical intelligence-gathering and dissemination would need to change. The IDF shifted to technological platforms and an intelligence doctrine that emphasized the provisions of real-time tactical intelligence from multiple sources (agents in the area, electronic interceptions, drones, fixed and rotary wing aircraft, and troops) to provide commanders on the ground with information about enemy positions.<sup>21</sup> Given the presence of civilians, techniques also had to be developed to ensure a minimization of loss of life among civilians. These included low yield munitions which were fired from a drone or helicopter into a room of a building via a window to kill a target without others in the building realizing that the building was under attack. Additionally, the IDF adopted tactics to warn civilians of pending attacks and to encourage them to leave the target area. These include roof knocking, which involves the firing of a low yield or non-explosive munition at the roof of a building to frighten the civilians in it and thus encourage them to flee the building before it comes under actual attack. Israel also started experimenting with dense inert metal explosives that create a highly concentrated blast without expelling shrapnel to contain damage to the actual blast zone.<sup>22</sup> Israel would have a chance to test these new approaches, technologies, and tactics less than a year and a half later in the Gaza Strip.

## Operation Cast Lead

Israel transferred power to Fatah forces representing the Palestinian Authority upon its unilateral withdrawal of troops and settlers from the

Gaza Strip in September 2005. The Palestinian Authority was unable to maintain control and its forces were overthrown violently by Hamas forces in June 2007. Although rocket fire from Gaza was not unheard of in the 1990s and early 2000s, an increase of rocket fire into Israel after the Hamas takeover eventually drove the Israeli government to authorize a military operation in Gaza. Thus, in December 2008, during Operation Cast Lead, the IDF had a chance to test the changes it made to its training regimen, equipment, and doctrine against another hybrid opponent, albeit one that enjoyed far fewer advantages than those enjoyed by Hezbollah. Unlike Lebanon, Israeli and Egyptian territory surrounds the Gaza Strip. In addition, the Israeli Navy controls its coastline. Hence Hamas, Palestinian Islamic Jihad, and other Palestinian organizations in the Gaza Strip do not benefit, as Hezbollah does, from the use of porous borders with Syria or control of seaports and airports from which it can smuggle in arms from Iran. Moreover, Hamas also does not control a sovereign state government, as does Hezbollah in Lebanon, with all that this entails for the ability to operate in a country's territory. From an intelligence perspective as well, Israel has much better penetration of the Gaza Strip (and West Bank) than it does of Lebanon. To make matters even worse from the Palestinian perspective, unlike southern Lebanon's difficult to traverse terrain, the Gaza Strip is flat and easily accessible from Israel. However, Hamas does enjoy one advantage, it rules one of the most densely populated areas of the world and this means nearly all fighting in Gaza takes place in dense urban areas where Hamas and its allies have built networks of tunnels, arms depots, and sniper positions, and otherwise prepared IEDs, smuggled in anti-tank missiles, and taken other measures to ready the urban battlefield.

Unlike the Second Lebanon War, Cast Lead had been planned as a ground operation and Israel mobilized needed reserves early on, as, by this time, ground operations were seen as a necessary part of the effort to defeat a hybrid opponent.<sup>23</sup> Once the IDF crossed into Gaza, Hamas fighters attempted to pull them into densely populated areas in order to conduct filmed ambushes and kidnapping of troops.<sup>24</sup> Israeli operations were characterized by an attempt to avoid collateral damage by selecting the appropriate munitions for specific targets, employing intelligence assets—including informants and airborne sensors—and active warning of impending operations to civilians via the aforementioned 'roof knocking' as well as warnings phoned in to people.<sup>25</sup> As a result, Hamas and other

operatives had to be constantly on the move to avoid detection and this severely disrupted their ability to effectively respond to IDF assaults while also increasing the likelihood that these fighters would expose themselves to IDF fire or capture.<sup>26</sup> The Israeli Air Force also destroyed pre-planned fixed targets while also interdicting targets of opportunity—such as Hamas personnel—and then shifted to on-call close air support when called in by IDF forces on the ground.<sup>27</sup>

Operation Cast Lead ended in January 2009 after 22 days of fighting with ten deaths among IDF soldiers—four in friendly fire incidents. Israel killed only a small number of Hamas personnel and leadership and thus left the organization largely functioning. Israel's objectives in the operation were unclear beyond a vague desire to restore deterrence and degrade Hamas's military infrastructure, with the latter objective being in keeping more with a counterterrorism policy that seeks to, *mow the grass*, in Israeli parlance, with ongoing operations to degrade enemy capabilities, rather than a hybrid war policy with a near-state actor. As noted, the conflict had vague objectives, which have both the advantage and the disadvantage of being hard to measure. This is an advantage because, unlike the situation during the Second Lebanon War when clear Israeli objectives, as described by the Prime Minister at the time, were completely unmet and helped thus create a sense that Israel had lost its war with Hezbollah, fuzzy objectives cannot be proven to *not* have been achieved. On the other hand, major military operations without clear objectives can lead to questions as to the necessity and justifiability of such operations—as were indeed raised by quite a few people inside and outside Israel at the close of fighting.<sup>28</sup> Nevertheless, if the objective was to significantly curtail rocket and missile fire into Israel from Gaza, this objective was achieved, for a time, during the period of 2009-2012—though there were flareups in the summer of 2011 and in early 2012. Developments that made the Israeli home front more resilient, thus creating more operations options for Israel's leadership, had a major impact on the next engagement with Hamas, Operation Pillar of Defense.

## Pillar of Defense

By 2012, Israel had deployed its new Iron Dome anti rocket system, and this weapons system would gradually give Israel the ability to withstand the bulk of Hamas's rocket fire on population centers and thus give Israel

more time and options in deciding how to respond to Palestinian attacks. Increasing Palestinian fire at Israel during 2012 and Israeli military responses eventually escalated and led to the eight-day operation Pillar of Defense in November 2012. As with Cast Lead, Israel's objectives were to restore deterrence and degrade Hamas's military capabilities—objectives that were vague enough, as noted earlier with respect to the previous conflict, to allow Israel to declare a victory at a point in time of its choosing. Israel had to accomplish these vague objectives while minimizing damage to the Israeli home front and avoiding negative international political fallout, particularly with respect to the Muslim Brotherhood-affiliated Egyptian government of Muhammad Morsi.<sup>29</sup> Had fighting with the Palestinians led to a breakdown of the peace agreement between Israel and Egypt, this would have been a grave outcome for Israel and thus this outcome needed to be avoided at all costs.

Unlike Operation Cast Lead, Pillar of Defense was largely an air campaign—though with some special forces' activity on the ground. It also involved the deployment of new intelligence capabilities vis a vis urban areas in Gaza to allow for more pinpoint attacks, including a reported increase of 25 percent in the number of military intelligence officers in the IDF and greater use of manned and unmanned aircraft to create situational awareness.<sup>30</sup> Attempts were made to reduce civilian casualties from air strikes through the dispersal of leaflets, roof-knocking, and automated calls to residents, and many urban targets had to be vetted and approved by IDF lawyers.<sup>31</sup> Despite the focus on air operations, Israel called up a total of 57,000 reservists—most of whom were ground forces, and this was comparable to the call up of reserves for the Second Lebanon War and much larger than the number mobilized for Cast Lead. This large number of reservists was mobilized both to prepare for the possibility of the need for a large ground operation and to demonstrate to Hamas, Egypt, and other actors, that Israel was serious about curbing Hamas rocket fire and prepared to undertake a major ground operation.<sup>32</sup>

Ultimately, Israel chose not to order its reservists to enter the Gaza Strip, a decision that has been attributed both to Israel's lack of desire for a major ground engagement in the cities of the Gaza Strip and also due to the success of Iron Dome in intercepting rocket fire and thus maintaining normality in most of Israel, outside sparsely populated areas near the Gaza Strip.<sup>33</sup> As with Cast Lead, Pillar of Defense restored quiet for a time. It

demonstrated the desirability and effectiveness of anti-rocket systems, the utility of using air assets in urban operations (to the degree that these systems may obviate the need for a major ground operation), the importance of precision weapons, and the criticality of command-and-control capabilities and cyber assets.<sup>34</sup> However, Hamas's advances in creating a subterranean network of tunnels, both to protect its assets and to launch attacks in Israeli territory, ultimately pushed the pendulum back in the direction of ground operations in urban environments in the Gaza Strip.

## Protective Edge

Pillar of Defense brought a measure of quiet to Israel's border with Gaza that lasted for about a year and a half, but in July 2014, the next round of fighting broke out between Israel and Hamas due to increased rocket fire and an increasing tempo in Israeli operations. Operation Protective Edge, which began on July 8, lasted 51 days and was by far the most lengthy and destructive conflict between Israel and Hamas to date. Protective Edge began with an extensive air campaign targeting Hamas assets and individual Hamas commanders. However, Hamas had learned from Pillar of Defense that it needed to deploy more of its assets underground and as a result, Hamas was comparatively less vulnerable to Israeli air operations, and this similarly allowed the organization to hide command and control capabilities, and rockets and other assets from Israel.<sup>35</sup> Hamas and other groups in the Gaza Strip based their operational concept on the use of tunnels to safeguard personnel and materiel.<sup>36</sup> As a result, Israel's air operations were comparatively less effective than in previous engagements.<sup>37</sup> Moreover, once all the pre-approved targets had been hit, it took some time for Israel to acquire new targets and have them vetted and approved by the IDF's legal team.<sup>38</sup> By this time, Israel's approach to targeting in the urban environment had been solidified. For preplanned targets, the process involved:

1. Collecting intelligence on the target to validate that it is a legitimate military target under the Law of Armed Conflict
2. Determining the objective in attacking the target—for example, destroying an infrastructure or eliminating an individual



3. Developing options for the strike, including minimization of collateral damage
4. Requesting professional advice on the target, including legal opinions
5. Obtaining command approval for hitting the target.<sup>39</sup>

Unlike the process for preplanned targets, the process for hitting a target that suddenly presented itself in real time was much more expeditious and often did not involve lawyers. However, after the operation, Israel's State Comptroller and Ombudsman determined that for future operations, the IDF should stipulate in a Supreme Command Order the obligation to receive legal accompaniment in the process of formulation of orders, and at least in respect of orders dealing with employing firepower, which may have implications for human life.<sup>40</sup>

While Israeli tactics, including legal review of operations, were developing, Hamas was also honing its tactics. Hamas established three lines of defense to try and cope with Israeli operations. The first line of defense was located up to 2 km inside the border fence and involved a network of mines, improvised explosives, ambush sites, and mortar targets.<sup>41</sup> The second line of defense was at the outskirts of the major cities in the Gaza Strip, where heavy mortars, machine guns, and anti-tank weapons were deployed—along with snipers and suicide bombers.<sup>42</sup> The final line of defense was the tunnel network inside the cities designed to allow movement of fighters and material and to surprise IDF forces, as well as the use of boobytraps and mines. Hamas also developed the capacity to attack Israeli territory via amphibious assault, paragliders, and, most worryingly, via tunnels. The tunnel threat into Israel, in particular, led to an Israeli push to uncover these tunnels—many of which started 3 km inside the Strip- and thus authorize a major ground incursion.<sup>43</sup> Israel ultimately uncovered and destroyed some 100km of tunnels during the operation—one third of which extended into Israeli territory, and the pursuit of these led IDF forces to enter urban areas, resulting in some significant urban battles.<sup>44</sup> All of this resulted in a larger IDF death toll (66 soldiers) as well as a significant number of Palestinian fatalities (approximately 2,133, of whom 1,489 were civilians).<sup>45</sup>

During many of the pitched battles in urban areas, tanks and other armored vehicles with active protection systems proved their worth in

protecting troops while providing mobility and demonstrated that air power cannot compensate for armored vehicles on the ground.<sup>46</sup> The campaign resulted in significant losses to Hamas in terms of tunnel infrastructure and other assets, but left Hamas fully intact. Protective Edge led to a longer period of Israeli deterrence of Hamas. In December 2021, Israel attempted to finally put an end to the tunnel threat through its completion of an anti-tunnel barrier, equipped with sensors, along the border with the Gaza Strip, and this has thus far been successful. The destruction left in the wake of Protective Edge also arguably led Hamas to opt for less direct means of confrontation with Israel including encouraging (sometimes violent) mass demonstrations at the border with Israel as well as shifting the location of the 'battlefield' via authorizing more Hamas operations against Israeli civilians and soldiers in the West Bank.

Protective Edge also saw significant improvements in the provision of tactical intelligence at the brigade level, with commanders having access to signals intelligence, human sources, and UAV cameras.<sup>47</sup> At the same time, these shed little light on Hamas's tunnel networks and, at the strategic level, there was little insight into what Hamas might do in various scenarios.<sup>48</sup> In the wake of Protective Edge, the IDF began reinvesting in armored vehicles and the fighting reinforced the arguments in favor of the benefits of active protection systems such as the Trophy Active Protection System deployed on Merkava tanks and Namer armored personnel carriers. The system not only addresses the threat posed by rocket propelled grenades and anti-tank missiles, but also provides immediate intelligence on the location from which a rocket-propelled grenade or missile was fired.<sup>49</sup> The next round of fighting did not feature any major new developments in urban warfare and returned to a reliance on air power in the urban environment. The new round of fighting did, however, evidence greater Hamas capabilities to target more Israeli cities, but the success of Iron Dome batteries largely neutralized these greater attack capabilities.

## Operation Guardian of the Walls

The next—and at the time of this writing last—major round of Israel-Gaza fighting erupted on May 10, 2021. In 11 days of fighting Palestinian groups fired more than 4,000 rockets from Gaza and Israel killed over 200

Hamas and Palestinian Islamic Jihad members. However, the IDF did not destroy much of the enemy infrastructure, only destroying approximately 850 rockets of the estimated 15,000 rockets in the hands of Hamas and other Palestinian factions.<sup>50</sup> At the same time, Iron Dome missiles neutralized approximately 90 percent of the rockets fired at Israel, and over 100 km of tunnels that made up about one third of Hamas's underground infrastructure—known in the IDF as “the Metro” were destroyed by the Israeli Air Force, something that will perhaps prompt Hamas to reconsider the value of its reliance and focus on underground logistics and operations.<sup>51</sup> According to some reports, the IDF had actually planned to draw hundreds of Hamas members into the tunnels via faking a ground invasion and then kill them via air strikes, yet Israel apparently showed its hand with some early air strikes on tunnels coupled with weak efforts to convince Hamas that a ground invasion was imminent.<sup>52</sup>

Operation Guardian of the Walls once again illustrated the IDF's desire to avoid entering urban areas with ground forces and to try and address threats via precision bombing. As noted above in the discussion of the four major military operations in Gaza, reliance on air power to neutralize urban threats has come in and out of favor. The fact that the IDF, and Israel's civilian leadership, allowed themselves the relative luxury of relying on the Air Force in Guardian of the Walls is likely a combination of advances in intelligence, targeting, and the use of precision munitions coupled with the reduced threat to Israeli citizens from rocket fire due to Iron Dome, and Hamas's inability to use tunnels to initiate cross-border kidnapping or terrorism operations.

Yet Hamas, demonstrated both resilience and an ability to improve its capabilities, as manifested by its increasing operational capacity to engage in sustained rocket fire that targeted deeper into Israel than ever before, threatening Tel Aviv, Jerusalem, and other major population centers in Israel. While not a direct result of Hamas efforts, Guardian of the Walls also saw the most widespread civil strife in Israel, with major riots flaring up in Israeli-Arab towns and mixed Jewish-Arab cities, and, while civil strife in Israel is outside the scope of this study, Hamas may come to view the potential for civil strife inside Israel as another tool to use in its ongoing conflict with Israel. For now, the significant damage to infrastructure in the Gaza Strip due to air strikes, coming in the wake of previous operations, has given Hamas leaders an interest in focusing on

rebuilding and maintaining calm with Israel. This, of course, does not solve the underlying conflict (assuming it can be solved) and it is likely that as long as the asymmetric power relationship exists between Israel and Hamas, the Palestinian organization and its affiliates in the Gaza Strip will continue to look for ways to force the IDF into the streets, alleyways, and warrens of the cities of the Gaza Strip, where the Palestinians can take advantage of the urban environment to level the playing field with the IDF and extract a more significant human, economic, and political ‘price’ from Israel.

### **Conclusion: Israel and the Challenges of Urban Warfare**

As evidenced from the above discussion, Israel’s approach to urban warfare has evolved dramatically over time and has gone through periods focusing on ground operations to periods in which the bulk of its efforts were in air operations. While urban warfare had been a feature of all of virtually all of Israel’s wars, it had previously involved regular (and sometimes irregular) forces fighting in the streets of towns and cities and did not start to qualify as urban warfare, in the sense used here, until the 1982 Lebanon War—though even at this time, the most important military engagements still occurred on the battlefield, in clashes between Israel and Syria. Gradually, the focus of the main battle space shifted from the battlefield to urban environments in the 1990s as urban warfare became a major feature of Israel’s military operations. Operation Defensive Shield in the West Bank, the Second Lebanon War, and the four Israel-Hamas clashes in the Gaza Strip, from Cast Lead to Guardian of the Walls, all involved new tactics, technologies, and efforts to leverage the urban environment to one side’s advantage at the expense of its enemy. The overarching trend in the evolution of Israel’s approach to urban warfare has been one of:

1. A greater focus on accurate battlefield intelligence to pinpoint adversaries and minimize collateral damage,
2. Increased use of accurate, low yield weapons systems for surgical strikes and defensive weapons systems to protect IDF forces in urban environments,
3. Greater use of air defense systems (once developed) to protect the civilian population from rocket and missile

attacks thus enabling a more flexible response with comparatively less time pressure,

4. Greater willingness to mobilize large numbers of reservists for ground operations to demonstrate intent and to deploy them if needed,
5. The increased use of combined arms including infantry, combat engineers, fixed and rotary aircraft, tanks, armored personnel carriers, artillery, armored tractors, and special forces,
6. A greater understanding of the need to ensure that operations do not run afoul of the Laws of War or other international legal conventions.

Post-Guardian of the Walls, Israeli Police are likely to deploy in greater numbers to prevent civil strife within Israel during future major IDF operations against Hamas in Gaza. Notwithstanding the above, there is also a significant possibility that the type of hybrid warfare that Israel has engaged in since 1982 will move increasingly towards a more conventional military approach, in the early stages of a future war. As noted above, thus far, advances in Israel's anti-rocket and anti-missile systems have allowed Israel to use force more sparingly and wait for some targets to present themselves, thus minimizing civilian casualties and reducing physical destruction. At the time of this writing, there is an increased likelihood that Israel will face a coordinated multi-front war against Iranian proxies in Syria, Hezbollah, and Hamas and other Palestinian factions—all orchestrated to some degree by Teheran.<sup>53</sup> In this scenario, the sheer number of rockets and missiles in the hands of Hezbollah, Iranian proxies in Syria, and Palestinian groups in the Gaza Strip, will quickly overwhelm Israel's rocket and missile defense systems and cause significant damage and loss of life in Israel. It is therefore highly likely that Israel will revert to a more traditional approach of hitting the enemy quickly with maximum force to end the conflict as soon as possible. In such a situation, concern about collateral damage will play a much less significant role and Israel is likely to view the conflict, while not existential, as one that it needs to end quickly to limit the damage that it will suffer. Thus, while Israel has drawn conclusions from the accumulated engagements noted above, and thus developed an operational doctrine for dealing with hybrid warfare in urban environments, its enemies are continuing to evolve and

present it with new challenges that may necessitate significant changes in this operational doctrine.

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