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SWORDS OF IRON: INSIDE THE MILITARY CAMPAIGN THAT CHANGED THE MIDDLE EAST

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DEFENCE AND SECURITY

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Introduction

The attack carried out on October 7th, 2023, by the Palestinian armed group *Ḥarakat al-Muqāwama al-Islāmiyya*, generally known as Hamas, marked a turning point in the Middle East scenario. The military action conducted against the State of Israel, and configurable in some respects a rudimentary brigade-level multi-domain offensive operation, achieved a strategic, operational and tactical surprise, which caused the death of 1,163 people and the kidnapping of 255 individuals. Furthermore, it took over 72 hours for the Israeli Armed Forces (IDF), in conjunction with the internal security apparatus to neutralize the infiltrating Hamas' cells. However, Tel Aviv regained the initiative immediately after the aggression, launching Operation Swords of Iron, designed mainly to neutralize Hamas, profoundly disarticulating its organization, degrading its military capabilities, and allowing the recovery of all the hostages. However, it soon expanded, also due to the malicious actions carried out against Israeli territory by the Lebanese Shiite paramilitary movement Hezbollah and the Yemeni armed group Ansar Allah, known as Houthis, to pursue the intent to re-establish Israel's regional deterrence, destroying all perceived sources of threat.

To this end, the IDF planned and conducted an articulated series of coordinated military operations on multiple fronts: two main ones, which recorded significant and protracted air-land maneuvers with intense fighting, and three secondary ones, the subject of more limited and sporadic actions, mainly involving long-range targets. The former is represented by the Gaza Strip, the operational heart of Hamas, and Lebanon, a stronghold of Hezbollah, while the others concern the remaining state and non-state actors attributable to the so-called Axis of Resistance, an informal coalition whose strategic objective is to damage the State of Israel, considered illegitimate by its adherents. Specifically, these are represented not only by Hamas but also by Hezbollah and the Houthis, by the Islamic Republic of Iran and the Syrian Arab Republic, as well as by Iraqi Shiite militias.

The vast scale of operations necessitated a major deployment of forces by the IDF. Immediately after October 7th, 300,000 of the 465,000

available reservists were mobilized, integrating active-duty military personnel in all land, naval and air components. Swords of Iron, in its many articulations on different fronts, has constantly characterized by a significant joint and multi-domain synergy, pursuing accurate synchrony in the realization of effects through the physical, virtual and cognitive dimensions. Informed by a detailed Intelligence Preparation of the Operational Environment (IPOE), based on the unprecedented combination of multi-source Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) capabilities with artificial intelligence (AI) enabled analysis systems, the operations significantly enhanced the long-range combat and attack potential expressed by the Israeli Air Force (IAF). This represented the pivot of kinetic activities in each of the fronts of Swords of Iron, demonstrating an extensive range of action, as well as an extremely significant rhythm and operational resilience functional both to disarticulate and degrade certain sources of threat and to operate in direct support of the ground maneuver (CAS) - Close Air Support), helping to significantly limit losses among the soldiers of the Israeli Ground Forces (IGF). At the same time, the proximity of at least three of the fronts to Israeli territory also allowed a massive use of tube artillery by the IGF itself, which was widely employed in support of operations and against potential threats in the Gaza Strip, southern Lebanon and Syria. The deconfliction of the airspace, in sectors that are already extremely compartmentalized, in particular between the operations of manned, fixed-wing and rotarywing aircraft, indirect artillery fire and the ubiquitous multi-altitude activities conducted by aerial drones (UAVs – Unmanned Aerial Vehicles) represented a specific challenge, all the more so since combined with the need to keep a multi-layered air defense architecture constantly active, including for protection against rockets, artillery ammunition and mortar shells (C-RAM – Counter-Rocket, Artillery and Mortar). Despite the high effectiveness achieved in this delicate coordination of trajectories and temporal segregations of the airspace, the IDF nevertheless reached peaks in the rate of UAVs shot down in friendly fire incidents close to 40%, highlighting in perspective the criticalities in the discrimination between threats and allied assets (IFF – Identification Friend or Foe) in airspace on an increasingly congested battlefield. Both in the Gaza Strip and in southern Lebanon, the IDF also demonstrated

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significant capabilities in the conduct of combined arms maneuvers, especially with the widespread inclusion of advanced capabilities in combat engineering, which was decisive in degrading the underground arsenals of armed groups such as Hamas and Hezbollah.

Net of the temporal overlap in the operations on the different fronts, the IDF tended to calibrate the intensity of their activities in each of them to selectively concentrate their combat power on only one adversary at a time, implementing a detailed long-term planning, which coordinated the generation of decisive conditions with the phasing of combat operations. This sequential strategic-operational approach was followed at the tactical-operational level by a systematic succession, in each theater, before a deep and rapid disarticulating action, conducted mainly by the IAF, often in concert with units of the IDF Special Operations Forces, followed by more protracted operations of degradation of the adversary's military capabilities, but in a context of reduced threat to its own forces, consequent to the collapse of the enemy's command and control (C2) hierarchies. However, each front had its specificities, deriving both from the characteristics of the operational environment broadly understood and from the specific objectives set as a premise in terms of disarticulation and degradation of each adversary, from which diversified lessons identified and learned therefore derive.

The main theater: the Gaza Strip

The Gaza Strip represented the first and main front of Operation Swords of Iron, in terms of duration and intensity of fighting, distinguishing itself for the prolonged and high level of engagement of numerous IGF units. Governed de facto by Hamas since 2005, the Palestinian enclave constituted the battlefield of one of the most massive Military Operation in Urban Terrain (MOUT) in the history of contemporary warfare, understood by the IDF not in a context of Counter-Insurgency (COIN), but of conventional warfighting, albeit against an asymmetric opponent. The IDF addressed the intrinsic trilemma between neutralization of the enemy, protection of its forces and safety of civilians, deriving from operating in a densely populated urban context, prioritizing the first two aspects, in line with the same essentially kinetic and non-stabilizing intent of Swords of Iron.

In detail, the IDF had to deal with an adversary military device with about 27,000 fighters in the Ezzedin al-Qassam Brigades, the armed wing of Hamas, and another just under 7,000 militiamen belonging to the armed groups Lions'Den and Palestinian Islamic Jihad, entrenched in a three-dimensional urban architecture, including underground tunnels, highly congested and anarchic. The Gaza Strip extends for just 40 kilometers in length and at most for 10 in width, on a total area of around 360 square kilometers and with a population density before October 7th of more than 5,000 people per square kilometer. The extremely compartmentalized spaces, the mixture, as well as contiguity, between buildings used for military and civil purposes, even residential, and the difficulty of discriminating and selectively engaging only the members of Hamas, a movement in itself strongly rooted in the territory beyond its military wing, plausibly represented the premise for massive collateral damage, since the beginning of the aerial targeting against the enclave and continued until the ceasefire. The provision of repeated evacuation orders for the civilian population was the basic measure aimed at preventing their contact with the troops or their presence in combat areas, but with Hamas' transition to guerrilla tactics and the evolution of the Gaza Strip into an exemplary theater of devastated terrain warfare, it could not prevent a significant number of civilian casualties, also caused by the indirect effects of hostilities on the humanitarian situation in the Gaza Strip.

Israeli operations in the sector began immediately after October 7th, with the consolidation of the military belt around the enclave and the conduct of bombings against High Payoff Targets (HPT) involved in the previous penetration of Hamas militiamen. The IAF then carried out a massive air campaign against weapons depots and high ranking personnel of the Palestinian armed group, enabled by a targeting process enhanced by machine learning solutions in the phase of collation of Intelligence, Surveillance and Reconnaissance (ISR) sources to constantly generate target lists. In the first five days after the Hamas attack alone, the IAF dropped more than 6,000 aerial munitions on the Gaza Strip, making full use of its stockpiles, including non-marginal quantities of unguided bombs, including M117 demolition devices, designed specifically for the destruction of buildings, and munitions belonging to the Mk80 series, whose tonnage varies from 227 to 907 kilograms. The operational rhythm imposed and supported by the IAF, from a logistical and maintenance point of view, generated profound effects on Hamas' C2 capabilities at every hierarchical level, making the Ezzedin al-Qassam Brigades combat ineffective as light infantry units.

The air sorties, incessant and extended to the entire territory of the Gaza Strip, continued autonomously until October 26th, when the conditions on the battlefield generated by them and the parallel mobilization of the IGF allowed the start of the ground campaign. Initially led by the 84th Givati Infantry Brigade, part of the 162nd Ha-Plada Armored Division, this involved conducting a series of diversionary attacks and reconnaissance in contact operations aimed at generating dilemmas for Hamas units on the real direction of Israeli penetration, while allowing the armed group's defensive preparedness to be verified. The same were conducted by armored columns, generally composed of DR9 bulldozers, highly protected vehicles particularly suitable for opening safe access corridors, including removing any mines, followed by Merkava Mk4 Main Battle Tanks (MBT), which, thanks to the 120 mm smoothbore gun, guaranteed direct fire capabilities, supported in turn by heavy and light infantry embarked on Armored Personnel Carrier (APC) Namer, and functional to protect the flanks of the columns in penetration. This preliminary phase was followed first by a large-scale advance deep into the Northern Governorate of Gaza, and then by the opening of further fronts along the eastern border of the enclave, in particular with the entry of the 36th *Gaash* Armored Division into the Netzarim corridor and the 98th Paratroopers Division into the Khan Younis Governorate.

The IGF, always operating in close coordination with the continuation of the IAF targets, which cumulatively conducted sorties against a total of almost 45,000 targets, therefore proceeded to compartmentalize the territory of the Gaza Strip into sectors, in order to prevent the movement of Palestinian fighters and proceeded to neutralize all threats in each quadrant. The ground maneuver was therefore divided into a succession of raids and clearing operations, the former aimed at displacing Hamas' defenses by wrapping them around the flanks or neutralizing High Value Targets (HVT) by bypassing the front lines and the latter aimed at securing entire urban quadrants. In these operations, the IDF limited direct engagements, often falling back in the event of contact with the enemy to allow artillery support fire or the conduct of attacks from the third dimension, in the form of CAS by fixedwing aircraft or Close Combat Attack (CCA) of rotary-wing assets, mainly AH-64D Saraf helicopters. The Standard Operating Procedures (SOPs) followed by Israeli units have made it possible to limit Tel Aviv's losses, which in January 2025 nevertheless reached 405 killed in action (KIA) and more than 2,500 wounded in action (WIA), as a result of Hamas's rapid transition to guerrilla tactics enabled by a significant network of underground infrastructure. Although the high level of protection provided by the IDF vehicles, especially thanks to the proven effectiveness of the Trophy active defense system against the widespread use of rocket propelled grenades (RPG) by Hamas militiamen, the tunnels allowed Palestinian fighters to maintain a certain freedom of maneuver on the battlefield, which was then reflected in the need for the IDF to repeat clearing operations in the same sectors several times.

The simultaneous conduct of operations above and below ground level characterized the fighting in the Gaza Strip, with the succession of three distinct phases in the approach to the destruction of underground infrastructure and the simultaneous adoption of specific coordination measures between units operating in contiguous sectors. The articulated underground infrastructure operated by Hamas was first targeted through the use of dedicated bunker-buster type aerial ammunition, however, generating significant effects even above the ground, with the collapse of entire blocks. Subsequently, potential entry points to the tunnels were one of the primary targets of ground raids, to locate hostages and prominent figures in the Palestinian militia hierarchy. Finally, in the conduct of clearing operations, the underground tunnels were penetrated and destroyed as much as possible from the inside, especially through meticulous work by highly specialized formations of combat engineers, including the *Yahalom* unit. The expansion of underground operations at the same time led to an adaptation in the management of the boundaries between the areas of responsibility of the maneuvering formations, to prevent the risk that any actions below ground level could trespass without realizing it, due to the difficulties of communication and reception of the GPS underground in the sector of another unit, exposing personnel to friendly fire incidents. In order to prevent these risk, the IDF reorganized the distribution of the areas of competence of its units, always introducing a deconfliction buffer on the sides of the units, in which it was not possible to carry out kinetic actions without coordinating with the contiguous formation. Despite the countermeasures, tunnels such as the one identified near the Erez crossing, which extends for about four kilometers at a depth of 50 meters, or the one identified under Khan Younis with a length of one and a half kilometers, have represented a persistent threat, guaranteeing partial operational continuity to Hamas and allowing the infiltration of its fighters in areas considered safe.

The operations, which followed the same dynamic throughout the Palestinian enclave, were concentrated in the months first in the north, then towards Khan Younis and then reached their climax with the Rafah offensive, conducted with an enveloping maneuver by the 84th *Givati* Infantry Brigade and the 401st *Ikvot HaBarzel* Armored Brigade. After this, operations continued with a lower level of intensity, although there were daily engagements, still allowing the IDF to focus its combat

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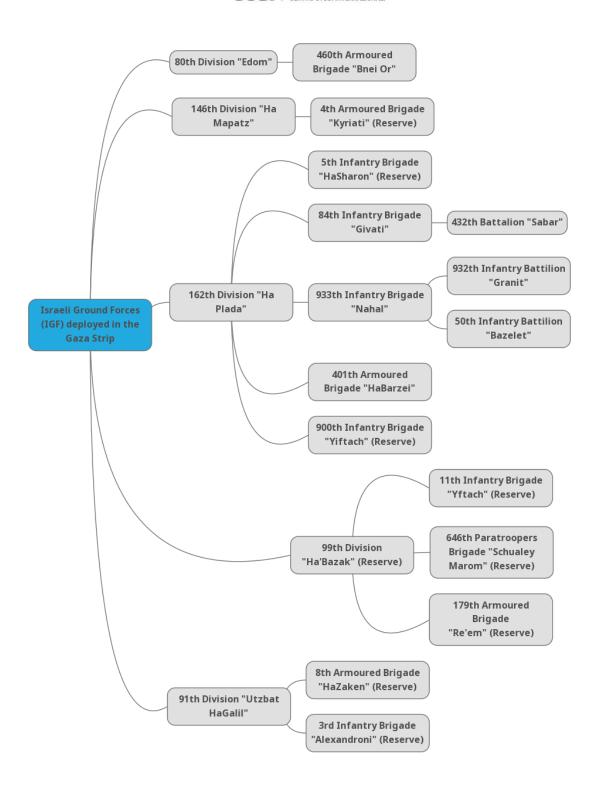
capabilities on other fronts. Overall, Swords of Iron led to the neutralization of more than 17,000 Palestinian fighters in the Gaza Strip, including 8 brigade commanders, 30 battalion commanders and 165 platoon commanders in the Hamas hierarchy, as well as all the organization's top brass. Beyond the fact that the movement continues to enjoy a non-marginal following and still controls the territory, having remedied the staff with recruits, its overall military capabilities have been degraded by at least an estimated value of more than 70%.

Cesi I CENTRO STUDI INTERNAZIONALI 143th Division "Gaza 261th Infantry Brigade Division" (Reserve) 1st Infantry Brigade "Golani" 7th Armoured Brigade 75° Armoured Battilion 36th Division "Ga'ash" "Saar me Golan" "Romach" 188th Armoured Brigade "Barak" 35th Paratroopers Brigade "Hativat HaTzanhanim" 551th Paratroopers **Israeli Ground Forces** Brigade "Hetzei (IGF) deployed in the Haesh" (Reserve) Gaza Strip 98th Division "HaEsh" 55th Paratroopers Brigade "Hod Ha Hanit" (Reserve) 214th Artillery Brigade "David's Sling" 10th Armoured Brigade "Harel" (Reserve) 252th Division 12th Infantry Brigade "Sinai" (Reserve) "Negev" (Reserve)

This chart does not necessarily reflect the totality of forces deployed in the operations.

16th Infantry Brigade "Jerusalem" (Reserve)

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The second front: Lebanon

The reduction in the intensity of hostilities in the Gaza Strip, with the withdrawal of some units and the substantial transition to COIN activities conducted mainly at small units level, allowed the IDF to concentrate its combat power on the second front, namely Lebanon. Starting in the aftermath of the October 7th attack, Hezbollah had launched an intermittent targeting campaign, mainly with unguided artillery rockets and Anti-Tank Guided Missiles (ATGM) against the north of the State of Israel, causing the evacuation of civilians from some areas. The Lebanese Shiite militia conducted over 4,000 attacks in aggregate, to which the IDF countered aerial and artillery bombardments that from October 2023 to August 2024 amounted to around 700 per month. These imposed a constant rate of friction, human and material, on Hezbollah, helping to dissuade the armed group from any real escalation in the confrontation with Tel Aviv.

The protracted cross-border engagements and the threat posed in the Israeli perception by the more than 50,000 fighters deployable by the Lebanese militia and the significant arsenals of long-range missiles believed to be in Hezbollah's possession, nevertheless promoted the planning and conduct of an air-land operation, called Northern Arrows, intended in sequence to disarticulate and degrade the militia, as well as to destroy infrastructure and cells attributable to it in a strip of about 30 kilometers between the Israeli-Lebanese border and the Litani River. The IAF first expanded the range of its attacks to Beirut, with the specific aim of neutralizing Hezbollah's political-military leadership, while maintaining a moderate operational pace. On July 30th Fuad Shukr, a high ranking and historical figure in the militia's military hierarchy, died in a precision air strike against a building in the Lebanese capital. During August, the total number of IDF attacks on Lebanese territory reached the third highest since October 7th, with 753 actions, without however foreshadowing, even for the Lebanese armed group, the possibility of a major campaign by the IDF.

In the days between October 17th and 18th, 2024, however, the Israeli security apparatus, in concert with the IDF, implemented *Grim Beeper*, essentially the first mass targeted killing operation in history, with the

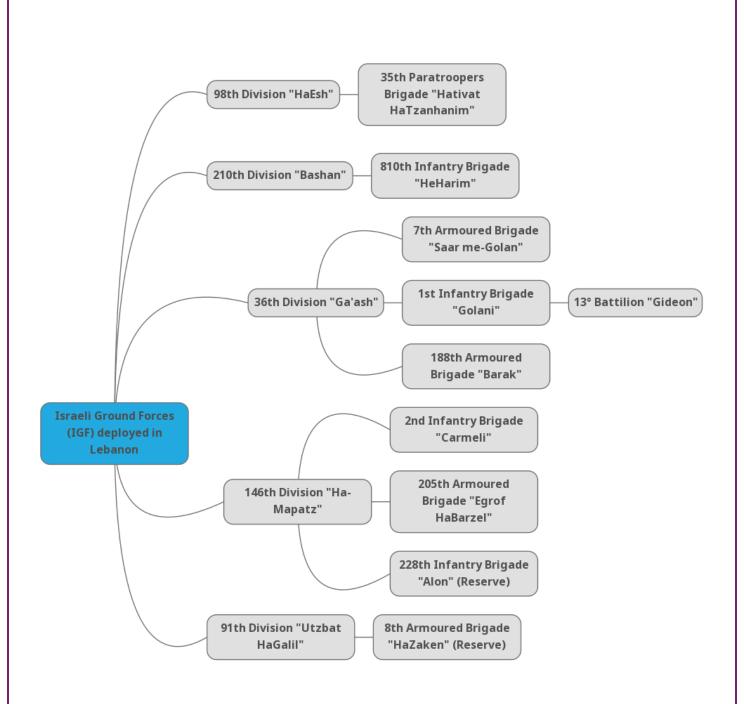
explosion in two separate waves of thousands of pagers and radios, tampered with high-explosive in the battery and sent to Hezbollah fighters through an articulated operation of infiltration and deception of the militia's supply lines. Beyond the losses suffered by the armed group, which were extremely significant, especially in terms of wounded and maimed, the action generated a profound effect in the cognitive dimension, undermining the morale of the combatants and causing a widespread sense of insecurity, in particular related to the fear about the degree of penetration of the hierarchies achieved by the Israeli security services and the level of detail achieved by the IDF's ISR capabilities. Taking advantage of the chaos and confusion among the opposing ranks, the IAF significantly increased its operational pace, arriving at conducting bombings against over 1,800 targets from southern Lebanon to Beirut in just three days, between September 23rd and 26th. Then, on September 27th, in an action called New Order, IAF F-15I Ra'ams neutralized Hassan Nasrallah, Hezbollah's Secretary General, in a coordinated massive point targeting operation, involving the dropping of about 80 guided aerial munitions on a block in Dahiyeh, in southern Beirut.

Three days later, the IDF began the ground phase of Northern Arrows, largely deploying units previously employed in the fighting in the Gaza Strip, in order to capitalize on the return of experience and lessons learned gained. These include units of the 98th Paratroopers Division, already widely engaged on the front line in the Khan Younis and Rafah offensives, and formations of the 36th Gaash Armored Division, replaced in operations in northern Gaza in January 2024 by the 1st Golani Infantry Brigade and the 188th Barak Armored Brigade. Constantly supported by indirect artillery fire and air strikes, the IGF focused on searching and destroying activities, aimed at identifying and destroying underground positions used by Hezbollah to conceal its arsenals and launch attacks on Israel. The combat engineers were thus once again decisive in achieving the objective, especially thanks to the use of explosives for mining from inside the tunnels, often not impacted by bombing as a result of the rocky geology characterizing the region. The IGF maneuver was first articulated in night raids, similar to those carried out in the early stages of operations in the Gaza Strip and then

transitioned to more in-depth actions conducted by combined arms units, composed of light infantry supported by MBTs. The eleven months of positional engagements with Hezbollah militiamen significantly contributed to reducing the stopping potential of the defensive lines set up by the armed group, while continuing to represent a significant threat, generally faced by the IGF with the conduct of offensive penetrations guided by armored vehicles and preceded by artillery barrages, CCA and CAS. The IAF's operations were decisive in shaping the battlefield in favor of the IGF, in particular by carrying out a deep and above all lightning-fast disarticulating action, which undermined the organizational center of gravity of the military wing of Hezbollah. The objective of degrading the military capabilities of the armed group, estimated at around 60%, was however only achieved through a meticulous land search and destroy activity, functional to reach sites highly protected by the same geology and morphology of the terrain.

The substantial imposition of a closed military zone in southern Lebanon also helped to increase the freedom of maneuver of the IGF, simplifying the battlefield for them, and limiting collateral damages, at least in terms of civilian casualties. During the hostilities, however, the United Nations Interim Force in Lebanon (UNIFIL) was involved, causing damage to some outposts and the wounding of some personnel, due to fire actions by both Hezbollah and the IDF. Overall, between September 2024 and the entry into force of a ceasefire agreement on November 26th, 2024, the IDF carried out over 6,500 air and artillery strikes across Lebanon, with a heavy concentration of these in the south of the country. Previous cross-border engagements and combat air-ground operations following the launch of Northern Arrows caused nearly 3,800 KIAs among Hezbollah's ranks, including about fifteen commanders and top leaders, while the IDF recorded 132 KIA.

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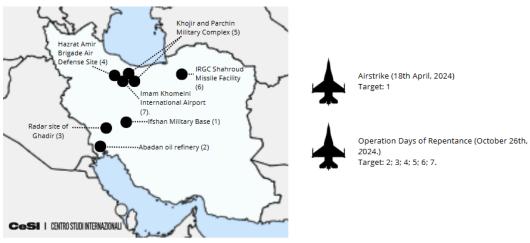
This chart does not necessarily reflect the totality of forces deployed in the operations.

The long-distance duel with Iran

The military support of the Islamic Republic of Iran, in particular through the Quds Force of the Islamic Revolutionary Guard Corps (IRGC), both to Hamas and Hezbollah, as well as the pivotal role of Tehran within the aforementioned Axis of Resistance, formally opposed to Israel, were the basis of significant escalations between the two states during the Swords of Iron. The IDF struck on several occasions, especially in Syria, sites and targets attributable to the Quds Force, causing the death of members of the same. On April 1st, 2024, one of these actions directly involved a service building of the Iranian Consulate in Damascus, killing Brigadier General Mohammad Reza Zahedi, a top figure of the IRGC in the region. In reaction, between April 13rd and 14th, Tehran carried out the first conventional strike by another state actor against Israel since 1991, in a demonstration action that involved the launch of 170 One Way Attack Unmanned Aerial Vehicle (OWA UAV), 30 Land Attack Cruise Missiles (LACM) and 120 Medium Range Ballistic Missile (MRBM) against military targets in Israeli territory. The so-called Operation True Promise, although anticipated, was a significant test for the advanced multilevel air defense and anti-missile architecture deployed by the IDF, reinforced on the occasion by an important contribution, especially of air assets, from the United States, the United Kingdom and France.

Although 99% of the attack vectors were intercepted and shot down, the IDF still planned and conducted a limited retaliation against Iranian territory, which involved the opening of an air corridor through Syria through the Suppression of Enemy Air Defenses (SEAD) to enable the approach of IAF aircraft to the Iranian border and the launch of longrange air ammunition, plausibly Air-Launched Ballistic Missiles (ALBM). The operation limited effects generated, damaging only one Iranian S-300PMU2 air defense battery, privileging the cognitive impact over the physical one to provide a resolute signal of deterrence, also in light of the barely five days that elapsed between the attack by Tehran and the retaliation by Tel Aviv.

The intensification of the IDF's air-to-ground campaign in Lebanon however led to a second offensive action by Iran against Israel. Designated Operation True Promise II, and carried out on October 1st, 2024, this involved an attempt to selectively saturate Israeli air defenses in the anti-ballistic segment with at least 180 MRBMs. The Israeli antimissile architecture, again complemented by assets of partners and allies, still recorded a 90% rate of kills, avoiding significant damage, but the impact in the virtual and cognitive dimensions of the attack promoted a more significant reaction than the previous one. On October 26th, the IDF conducted Operation Days of Repentance, deploying a hundred fixed-wing assets, manned and unmanned, in three series of sorties against a total of about twenty targets. Preceded, similarly to that of April 2024, by SEAD activities in Syria and timed to ensure the almost total absence of cloud cover over the region, to achieve maximum targeting precision, the action first degraded Iranian air defense capabilities, achieving in combination with the effects generated in the previous operation the Destruction of Enemy Air Defenses (DEAD) at least for medium- to long-haul segments. The next two sorties mainly hit sites belonging to the IRGC missile program, often neutralizing individual high-value equipment, including solid fuel mixers, used to propel ballistic missiles, in a demonstration of highly detailed and extremely accurate ISTAR capabilities in the generation of kinetic effects. The IAF made extensive use of ALBMs of different types in the operation, unique in military history, underlining the significant potential of these missiles in providing an option for the conduct of long-range precision targeting even in a defended airspace.



^{*}These graphics do not represent a comprehensive depiction of the objectives of the Israeli military operations.

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Although the objectives of degradation of Iran's military capabilities, specifically concerning the air defense of the territory of the Islamic Republic and the production potential of high-end missiles by the IRGC, were not plausibly anticipated in Swords of Iron, the fact that the IDF planned and conducted, as well as supported, such operations while remaining engaged, although with varying levels of intensity, on two further fronts, it represents a demonstration of significant resilience and operational adaptability. The same engagements between Iran and Israel in both directions are also harbingers of new technical and technological requirements, especially in terms of stratification of air defenses, rebalancing of the economic asymmetry of attack/interceptor vectors, but also of long-range attack options.

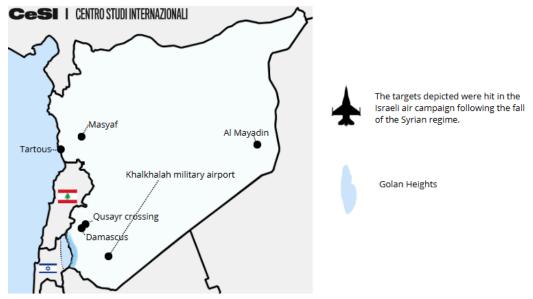
Operations in Syria

The use of Syrian territory as a supply corridor and support base for fighting groups adhering to the Axis of Resistance already led to sporadic air raids by the IAF in the country before October 7th, in particular to disrupt the operations of the IRGC *Quds* Forces operating there. The launch of Swords of Iron implied an increase in the frequency and intensity of these actions, which between October 2023 and December 2024 exceeded 330 air sorties and 460 strikes including fire missions conducted by IGF artillery. Between September 8th and 9th, 2024, the IDF also conducted an unprecedented operation, called Many Ways, involving the heliport infiltration of Special Operations Forces, massively supported by IAF attacks before, during, and after it, deep into Syrian territory, to penetrate inside an underground facility used for the production of attack vectors to provide destruction from within the site, otherwise too underground for effective aerial targeting.

Net of the individual tactical actions, the combination of the effects generated by the bombings and the disengagement of elements of the Axis of Resistance from supporting the regime of Bashar al-Assad, first and foremost Hezbollah, as a result of the engagement of the latter with the IDF in theaters considered primary, in particular Lebanon, contributed to generating the conditions for the rapid collapse of the Syrian Arab Republic under the Deterrence of Aggression offensive, initiated by a coalition of rebel formations, led by Hayat Tahrir al-Sham (HTS). The event outlined the need for the IDF to prevent the dispersal and subsequent appropriation by malicious actors of the significant arsenals that previously belonged to the Syrian Arab Army (SAA), as well as the strengthening of border control between the two countries. Operation Bashan Arrow was thus initiated, involving both the creation of a buffer zone beyond the Golan Heights, in a 75-kilometer-long and 10-kilometer-wide demilitarized area established after the Yom Kippur War in 1973, by the IGF, and a significant air campaign targeting mainly by the IAF. The ground component of the operation involved the units already deployed traditionally to defend the sector and also included the taking of complete control of Mount Hermon, a strategic position for the surveillance of Syrian territory. The IDF also carried out cautious search and destroy activities in the sectors of the advance, to neutralize

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weapons and ammunition depots, without however engaging or being engaged in firefights. In the first 36 hours after the collapse of the regime, however, the IAF conducted no less than 250 attacks, rising to over 400 in the following week, resulting in the destruction of almost all the arsenal of long-range missiles, aircraft, helicopters, air defense systems and more that belonged to the SAA. These actions then continued with sporadic sorties, informed by persistent ISR and ISTAR activity. Operations to degrade Syrian military capabilities left over from the collapse of the regime also involved the Israeli Naval Corps sinking the entire Syrian fleet in port.



*These graphics do not represent a comprehensive depiction of the objectives of the Israeli military operations

The timeliness of the Bashan Arrow air campaign reveals a pre-existing and precise IPOE of the Syrian theater, while the speed of the same underlines the significant capabilities of ISTAR, consequent generation of target lists and assignment of air missions, as well as the operational pace of crews and ground personnel developed and held by the IAF. Although the operation was conducted in unopposed airspace, the high number of sorties carried out in an extremely short time, the significant amount of aerial ammunition used and the implicit logistical maintenance support for the activities outline highly challenging standards.

The sorties against the Houthis

The collapse of the Syrian regime and the subsequent Bashan Arrow operation essentially completed the sequential and selective disarticulation of the threats in contact with Israeli territory posed by the Axis of Resistance. This promoted a significant increase in attempts to attack the State of Israel by the Yemeni Houthi militia, already proponent in the months after October 7th of sporadic kinetic actions with long-range vectors, as well as, starting from December 2023, of a significant targeting campaign against maritime traffic transiting the Bab el-Mandeb Strait and the Red Sea to generate economic pressure on the international partners of Tel Aviv. The armed group employed a wide arsenal of OWA UAVs, Anti-Ship Cruise Missiles (ASCM) and Anti-Ship Ballistic Missiles (ASBM), as well as unmanned explosive boats (E-USV – Explosive-Unmanned Surface Vessel), coordinated by drones for ISR for the conduct of frequent saturating attacks both on commercial vessels, two of which sank as a result, and against military units operating in the area. The launch, on December 12th, 2023, of Operation Prosperity Guardian, under the coordination of the US Central Command (USCENTCOM), tasked with ensuring freedom of navigation in the region, including through precision air and naval targeting against planned and opportunity military targets in Yemen, and on February 19th, 2024, of Operation Aspides of the European Union, with a solely defensive mandate for ships en route in the quadrant, however first reduced the impact of the malicious actions of the militia and then progressively disarticulated and degraded the relative military capabilities.

In order to more deeply damage the Houthis' combat power and in response to the first casualty attack conducted by the Houthis with an OWA UAV on Tel Aviv, as early as July 20th, 2024, the IAF conducted a significant bombing operation against Yemen, designated Outstretched Arm. Aimed at destroying critical infrastructure deemed functional to support the militia's war effort, including refineries, fuel depots and port cranes, it involved a composite aircraft device, including F-35I *Adir*, F-15 *Baz*, F-15I *Ra'am* and F-16I *Sufa* aircraft, supported for in-flight refueling, necessary in constancy of the approximately 1,800 kilometers of distance between Israeli bases and Yemeni territory, by KC-707 *Re'em*.

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The type of targets selected, the significant amount of precision aerial ammunition used, and the degree of destruction caused by them, in an action concentrated in time and complex from a logistical point of view, not only reaffirmed the capabilities of the IAF, but also allowed the experimentation of Tactics, Techniques, and Procedures (TTPs) transferable against other adversaries in different operational scenarios. The feedback generated by it was indeed plausibly partly integrated into the planning and conduct of both Operation Days of Repentance and Operation Bashan Arrow.



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The intensification of Houthi attacks in December 2024, on the other hand, led to a more articulated series of subsequent bombing actions, always against critical infrastructures, individually involving a smaller number of aircraft, but still challenging because of the distances covered, the consequent logistical-maintenance support, as well as the ISTAR capabilities necessary for the definition of targets and the evaluation of the effects generated (BDA – Bomb Damage Assessment). The first series of sorties was completed on December 19th, followed by a subsequent one on the 26th of the same month and further attacks in January 2025. The IAF thus consolidated its TTPs for such long-range operations, while validating its ability to support an air campaign of this type, more limited in intensity, but dilated over time, developing specific lessons learned that can be adapted to other theaters. Overall, the Israeli bombings have significantly degraded the port and energy infrastructures used by the Houthis, undermining their operational sustainability and producing a non-marginal deterrence effect.

Conclusions

Operation Swords of Iron, in its many ramifications, has not only profoundly disjointed and degraded the Axis of Resistance, largely destroying the threat it posed to the security of the State of Israel, but has essentially designated Tel Aviv as a real regional military superpower. The operational, tactical, technical, logistical and technological capabilities demonstrated by the IDF during a protracted multi-theater and multi-domain campaign, studded with decisive kinetic actions characterized by aggressiveness, lethality and speed of execution have outlined a standard unparalleled in the Middle East and extremely competitive at an international level. The IDF has often valued an accurate IPOE to undermine the adversary's centers of gravity, taking the initiative through a systematic pursuit of surprise and maintaining it by imposing an incomparable operational tempo. This was particularly evident in the conduct of the aerial campaigns, whose intensity and precision were based on the synergistic integration of AI in ISTAR's activities, allowing, with the support of a wide and diversified multisource and multi-sensor ISR network, widely focused on a large fleet of dedicated drones, the continuous generation of new target lists.

The planning and conduct of operations were also supported by a logistical-maintenance apparatus that constantly guaranteed a high degree of efficiency, first and foremost for the IAF's 340 fixed-wing aircraft. Although the importance of US military assistance to Israel cannot be underestimated, especially regarding components and aerial ammunition, which is particularly relevant in light of the high rate of consumption caused by the thousands of air strikes conducted on various fronts by the IAF, the operational resilience proven by the IDF remains remarkable. The firepower from the third dimension, as well as artillery on the fronts of the Gaza Strip and southern Lebanon, which implied the not infrequent use of unguided ammunition, was then accompanied by the selected use of long-range precision attack vectors currently unparalleled in the defense market. The successful use of ALBM has represented a significant novelty in detail, underlining the maturity of this technology and the significant advantages it offers.

If the ISR, ISTAR and air targeting capabilities represented the spearhead of the IDF's operations, the ground maneuver also generated significant lessons learned. The IGF has supported a massive mobilization, to which again an important contribution has been provided by the equipment, including basics, ensured by US military assistance, managing to coordinate over time two major air-land campaigns in profoundly diversified and evolutionary theaters. The maneuver in the Gaza Strip indeed transitioned from a MOUT to a devastated terrain warfare, while the fighting in southern Lebanon involved a broken terrain with rural and hilly character. On both fronts, the IGF, although widely integrated with reservists, expressed significant combined arms capabilities characterized by a significant reliance on armored, artillery and above all combat engineering components. The latter has been essential not only to support the mobility of Israeli units on highly irregular terrain and in compartmentalized spaces, constantly exposed to ambushes and the use of booby traps (IED – Improvised Explosive Device), but above all in countering the threat posed by underground infrastructure.

The IGF has consolidated both in the Gaza Strip and in southern Lebanon, their advanced skills and capabilities in the planning and conduct of coordinated operations above and below ground level, as well as in the exploration, information enhancement and neutralization of so-called Hard and Deeply Buried Targets (HDBTs). The lessons identified by the IDF during Swords of Iron, however, underline the importance of having dedicated aerial munitions for the destruction of these types of sites, in the absence of which highly complex and highrisk activities are necessary, such as the one carried out with Operation Many Ways in Syria. The fact that both Hamas and Hezbollah managed to maintain a minimum level of continuity of action thanks to these infrastructures then signals how they will increasingly tend to be reproduced by other potential adversaries, outlining the emergence of specific technical and operational requirements in terms of equipment and training. In fact, tunnels present multifactorial challenges, ranging from critical communication issues to the absence of a GPS signal, not to mention the need to move, and fight, in narrow spaces, where the total absence of light also tends to limit the effectiveness of night vision goggles.

The entire Operation Swords of Iron was finally conceived, planned and conducted as a warfighting operation, and the lessons identified and learned from it should be understood in this light. The IDF does not appear to have pursued COIN activities aimed at removing the support of local populations to the various armed groups at any stage, except with limited Psychological Operations (PSYOPS). The successes achieved in terms of disarticulation and degradation of the enemies, fully consistent with the initial intent, do not necessarily determine an improvement in the security conditions in the long term, with the risk of persistence of militant movements opposed to Israel. A partially different approach has instead concerned the West Bank, where the tendency to kinetic maneuvers has nevertheless been part of substantial Counter-Terrorism (CT) operations, partly coordinated with the Palestinian National Authority. The re-establishment of regional deterrence achieved by the IDF is therefore at present the main functional factor for at least a medium-term guarantee for the security of the State of Israel.

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