Army Aviation: Optimal Integration of Aerial Assets in Ground Combat

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The past decade has seen increased discussion about the future and value of ground maneuver in the IDF. Indeed, since the Second Lebanon War, Israel has hesitated to use its ground troops in operations and has harbored doubts—including within the IDF itself—over the achievements of maneuver warfare vis-à-vis enemies that circle Israel and the willingness of the political leadership to employ it. As part of the five-year plan for the IDF, then-Chief of Staff Aviv Kochavi guided an approach centered on intelligence fusion that would be relayed from all the IDF sources to the maneuvering units; and an autonomous system, based on artificial intelligence, that would direct fire at identified targets and chart a path for the maneuvering units on the battlefield. Most of the firepower would be from the air. The current structure of the IDF, in which responsibility for the buildup and operation of aerial forces rests almost exclusively with the Air Force, would not change.

This study examines the viability of this approach and its impact on Ground Forces operations. It then presents an alternative option: an army aviation force made up primarily of unmanned aerial vehicles (UAVs, or RPVs), which would be built within the Ground Forces and operate directly under the command of the ground units. The ground units would operate within a "mission bubble," with maximal independence in intelligence gathering, launch of offensives, and defense of the force from advanced aerial threats posed by enemy drones. The Air Force will focus on its relative advantages: strikes in the operational level, operations deep within enemy territory and distant enemies, air and missile defense, and achievement of air superiority. The study examines the advantages and challenges that this approach presents for the Ground and Air Forces, the expected difficulties in implementation, and the changes that would be needed in the Air Force, Ground Forces, and the General Staff.

Keywords: IDF, Air Force, Ground Forces, maneuver, army aviation, air superiority, General Staff, multidimensional warfare

Introduction

Over the past decade, there has been increased discussion about the future and value of maneuver warfare in the IDF (Tzur, 2016), particularly in light of clear hesitation since the Second Lebanon War to use ground troops during military operations. This hesitation stems from doubts, including within the IDF, over the achievements of maneuver warfare vis-à-vis enemies that circle Israel and the willingness of the political leadership to resort to maneuver warfare, given their understanding of the sensitivity of the Israeli public to casualties.

This article addresses the IDF's proposed solutions to this problem, especially the "multi-dimensional" approach that guided force buildup under Chief of Staff Aviv Kochavi, as detailed in his speech at the Institute for National Security Studies (INSS) before the end of his term of office (Kochavi, 2022). This approach is built on the "aerialization" of ground forces and a reliance on intelligence that is relayed to ground forces, coupled with fire primarily from the air—using aerial vehicles operated by the Air Force.

The lessons of the past, as well as careful examination of all possible points of failure, raise concerns that force buildup and application in this fashion could prevent the formation of ground units capable of fulfilling their missions, since they conflict both with the worldview of the commanders in the Ground Forces and the very nature of ground warfare, as well as with significant technological and organizational challenges. This article proposes an alternate approach, the "army aviation," where various aerial systems, most of them unmanned, would be put under the direct command of the army, be built by the Ground Forces, and be operated independently by the command on the ground during battle. This would allow the Air Force to focus on missions that no other branch of the military can conduct as part of the overall campaign.

In his address, Kochavi argued that the IDF's current capability for maneuver warfare is now

totally different from what came before it. It is based on what he called "the industrialization of precision": a greater amount than ever before of real-time intelligence, relayed back by the intelligence room to every front-line unit in the brigade and certainly to larger forces, with all the IDF's intelligence gathering capabilities channeled into an integrated intelligence picture, which would allow Israel to expose its enemies; and all kinds of firepower, from the air and the ground, in a variety of intensities, which would destroy the exposed enemy and in effect pave the way for ground forces to maneuver on the battlefield.

All this, Kochavi continued, is possible thanks to the digital revolution, which

has also revolutionized the battlefield, since it connects everyone. Anyone who is part of our advanced system can click on the tablet on a house that will be displayed in three dimensions; that target will appear on all the attack systems, which will decide who attacks—be it an F-15 or an attack helicopter—and the target will be attacked in a matter of minutes. It's a lot more than combined warfare; it's fused warfare. (Kochavi, 2022)

This is without doubt an ambitious vision that has the welcome pretension of addressing the main difficulty facing contemporary standing armies: the ability to defeat an "invisible enemy," which has very few strategic centers of power whose destruction would constitute victory, which hides among a civilian population and threatens not only the maneuver force but also the home front, since it has more advanced firepower than ever before—and all of this in a world where domestic and international legitimacy for an operation and public opinion decide the outcome of the campaign no less than the physical destruction of the enemy in battle.

Kochavi's comments suggest that the IDF's solution to the issue of maneuver warfare is the

"aerialization" of the land forces in two senses: first, the ground forces become a kind of "forward scout," and most of the physical destruction of the enemy is carried out by various aerial means. Second, and more important, Kochavi's vision is to do for the Ground Forces what the digital revolution, intelligence networks, and precision weapons did for the Air Force. Advanced technology is supposed to disperse the fog of war ("exposing the enemy to a massive extent, both in advance and in real time"); it will allow Israel to employ effective precision munitions against the enemy, even when there is minimal exposure time and it is in the heart of a civilian population center ("the target will be attacked in a matter of minutes"); and all of this will be fed by intelligence that has been analyzed far from the front lines (in intelligence cells) and be operated by a rear command (the attack cells that "will decide what attacks-be it an F-15 or an attack helicopter").

It is important to examine whether this is even possible, and if there is a more effective way to maximize Israel's air and land capabilities. To examine these questions, we need to go back to the beginning of the IDF's use of air support for the ground forces, identify the reasons for failings along the way, and critically examine the argument that technology can fix them.

Air Force Participation in IDF Ground Warfare: Much Effort and Controversial Results

From the Establishment of the IDF to the Revolution in Military Affairs

Since the establishment of the State of Israel, airpower was considered a very important element for decision in war. In a seminal documented presented to the government in October 1953, Prime Minister David Ben Gurion referred to airpower as the most important part of what he called the "strike force," saying that "our control in the air ensures us victory more than any other element, and the reverse [is also true]" (Ben Gurion, 1981, p. 7). Nonetheless, Ben Gurion also realized that the Air Force alone, even if it were to launch a preemptive strike (as in the Six Day War), would not be sufficient to achieve overall victory in the campaign. In 1950 he noted that "without an effective air force, we have no chance of victory, even if the victory is secured by the Ground Force. But the Ground Force has no chance of winning without an effective Air Force, especially if the Air Force is not effective at the moment that war erupts" (Brun, 2022, p. 37). It is possible, therefore, to say that from the very inception of the IDF, the Air Force was established as a force that was supposed to use highly important operational power, and at the same time, to help the Ground Force achieve decision in the war.

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In the Yom Kippur War, which began without a preemptive strike, the most important need during the conflict was the air support to ground forces. Still, there was a large and undoubted gulf between the investment in air support, as reflected by the number of aerial sorties, and the outcome—both in terms of the physical damage done to the enemy and in terms of the feeling of the Ground Forces, certainly as far it relates to decision in the campaign. This is despite a massive effort that involved much sacrifice.

Of the 11,223 sorties during the war, the Air Force conducted 5,142 sorties—almost half of the total—intended to support the ground forces (Sela, 2013). Yet in an internal Air Force document that examined the Golan Heights front, Brig. Gen. (res.) Yehezkel Somekh summed up the influence of aerial operations saying, "It is possible to say that the direct damage that the Israeli Air Force caused is far less than the IDF was used to from previous wars" (Gordon, 2008, p. 380). There is almost full agreement that the Air Force's influence on the main ground maneuvers—holding battle, the failed counterattack on October 8, the incursion into Syrian territory, the massive artillery battle on the Egyptian front on October 14, and the crossing of the Suez Canal—was limited.

There were many factors contributing to this outcome. The IDF entered the Yom Kippur War without a clear concept of how to utilize the Air Force for these missions and without a suitable organizational structure. The outcome was also the result of insufficient and irrelevant intelligence (which led then-Air Force Commander Benny Peled to conclude that the Air Force needed its own intelligence arm), and the fact that the imprecise munitions available to aircraft at the time made it hard to strike relatively small targets, such as tanks or bridges. Manned aircraft, which can only remain in areas above the battlefield for a very short time and which depend on precise intelligence, are an ineffective tool in a chaotic ground battle, and commanders on the ground found it hard to utilize them effectively.

The IDF's solution was to invest heavily in personnel in its coordination and support mechanisms. After the war, units were set up to coordinate operations between the Air Force and the Ground Forces—coordination designed to allow for the more effective air support: a unit of forward air cells in the geographic commands and a headquarters for transport helicopters. However, during the First Lebanon War there was also a noticeable gulf between the success enjoyed in the air superiority mission against Syrian air defense in the Beqaa Valley and the minor contribution, certainly compared to the effort invested, in air support during the first week of the war to the maneuvering forces, which remained in "glorious isolation" (Har Even, 2018).

Here, too, there was no lack of effort: 56 percent of the sorties launched by the Air Force during the first week of the war (June 4-11, 1982) were air support to ground forces—an even higher proportion than during the Yom Kippur War (45 percent). Maj. Gen. (res.) Avraham Rotem summed up his research into the Air Force's contribution to the ground campaign during the first week of the Lebanon War by writing, "All we know is that sometimes these sorties were utilized highly effectively and sometimes there were simply wasted" (Rotem, 2007, p. 62). He went on to specify reasons that were also connected to intelligence coordination, adding an important conclusion:

The relationship between Ground Forces and Air Forces is not, in a fundamental sense, a relationship between equals...Without engaging in cheap psychology, I argue that the classic emotional baggage between the supporting and supported parties taints this relationship. It starts with denying the need: one very senior officer said in his testimony that "he was not disappointed in the Air Force during the war because he had no expectations of it." (Rotem, 2007, p. 63)

In June 1982, the IDF, for the time in a significant battle, used attack helicoptersaircraft designed in essence to support the Ground Forces' combat. At the outset of the fighting, the Air Force had around 27 usable attack helicopters; most of these were relatively small McDonnell Douglas MD 500 Defender helicopters, while a minority were Bell AH-1 Cobras. They were operated by the Air Force, but the pilots felt on more than one occasion that the attention to them by commanders in the Air Force, which were responsible for the command cells, was incomplete and that there was a lack of understanding of their potential contribution to the battle. The coordination with the Ground Forces was also lacking.

The Revolution in Military Affairs and the Campaigns of the Past Decades

From the late 1970s, a new military doctrine began to develop in the United States, based

on both analysis of battlefields and the implications of technological developmentsthe computer revolution (followed by networkcentric warfare), the development of precision guided munitions, and the onset of unmanned vehicles, especially aerial vehicles. Much has been written about what came to be known as "active defense" (an approach that first appeared in US documents in 1976), AirLand Battle (1982), and the Revolution in Military Affairs (RMA, a doctrine that became prevalent in the 1990s). All these are concepts developed by and integrated into the US military, partly following the lessons learned from the Yom Kippur War, and also manifested in the IDF's force buildup starting in the 1990s.

The precision munitions revolution created a situation in which it was possible to launch an airstrike against any target, from a building to a mobile vehicle such as a tank, with an unprecedented level of accuracy. General Tommy Franks, a former head of US Central Command (CENTCOM), said that it only took 200 sorties a day during the campaign in Afghanistan to attack the same number of targets that it took 3,000 sorties to attack just a decade earlier in the Gulf War, when the vast majority were not precision munitions (Erwin, 2002).

When Ehud Barak served as chief of staff, the IDF's top echelons held a long series of meetings, following which then-Defense Minister Yitzhak Rabin launched what was known as the "Central Project." It was only 30 years later that the project was revealed to be the development and procurement of the Elbit Hermes 450 UAVs (Benn, 2022). The Hermes 450 was not just an aircraft; it was at the very center of an active defense doctrine based on longrange precision munitions. According to this doctrine, the IDF would block Syrian armored divisions long before they reached the frontline, thereby saving the need for a protracted and bloody ground battle, as happened during the Yom Kippur War. A large proportion of these munitions would be deployed by a variety of aircraft.

All this had a significant ramification: the aerial platforms were transformed from a support tool that was powerful and psychologically influential-albeit inaccurate, not readily available, and only capable of brief presence in the battlefield-into the main weapon of destruction. Aerial vehicles capable of striking with great precision from a distance that puts them out of range of the enemy and with a variety of munitions, from bombs that will only kill people to bombs weighing ton-weapons that remain within striking distance of the target for hours and are available to the ground force almost on demand—have gradually replaced artillery, tanks, and infantry in both planning and execution, in the wide variety of operations that the IDF carries out as part of its routine and in campaigns. The use of aerial vehicles, remote and often unmanned, dovetails with the increasing reluctance to use ground forces due to concern over casualties, what Edward Luttwak terms "post-heroic warfare" (Luttwak, 2002). The outcome of all this was a revealed preference to limit the use of ground forces and "give increasing priority to the Air Force" (Brun, 2022, p. 190).

The share of aerial assets in force buildup and military doctrine has grown consistently. The changed enemy—from regular armies that move in large formations and are easily identifiable to hybrid organizations embedded within the civilian population—has intensified the emphasis on precision strikes from the air, aided by excellent intelligence. The doctrine based on air operations was implemented in the war on terror (targeted killings), in the campaign against Hezbollah, against Hamas bases, and in the campaign between wars. Aerial operations have replaced the ground raid in the IDF's routine security operations, as well as decisive maneuvers in war planning.

Inevitably, the attention of commanders, investment of resources, and willingness to operate moved to the Air Force and Military Intelligence, which were perceived as more advanced, more suited to what was needed in the modern age, and no less important, were controlled optimally and precisely by the senior command level. Air vehicles, with the command's tradition of Air Force control centers, suited the desire for greater precision and the desire to resolve dilemmas using technology.

In the Second Lebanon War (2006), the same problems with air support missions arose, and there were "serious shortcomings in preparedness, fitness, and training" (Winograd Commission, 2008, p. 330). Joining this was the severe concern that a fighter jet would be downed-essentially intolerable in a campaign against an enemy that does not have an air force of its own-which meant that in offensive operations, the Air Force preferred to reduce risks "from an aerial perspective" at the expense of providing an answer for the needs of the Ground Forces. In contrast to the difficulty in launching air support attacks from fighter jets, the Air Force contributed greatly to evacuation missions and combat logistics (Ben-Israel, 2007; Winograd Commission, 2008).

Over the course of several campaigns in the Gaza Strip, the Air Force's ability to support ground battles became more sophisticated and, in effect, replaced them. The operation of UAVs to collect intelligence and to strike has expanded the ability to target and strike quickly and accurately; bombing buildings with heavy munitions as a precursor to a land incursion into Gazan neighborhoods reduced the danger confronting ground troops, and bombing tunnels from the air allowed Israel to destroy them without risking soldiers' lives by sending them into the tunnels.

But a word of caution on drawing any conclusions about the capabilities of Israel's airpower from the fighting in Gaza. Fighting on another front or a multi-front conflict would not replicate the balance of power between a very large Air Force, which is called upon to carry out few missions other than air support, and a relatively small number of ground troops operating in a small area for a limited purpose. The absence of significant air defense in Gaza and the ability to operate effectively outside the range of limited threat gave Israel broad freedom to fly with minimal risk. As a result, the nature of the fighting made support missions extremely accessible, and this could be misleading if we were to deduce anything about broader combat scenarios.

New Challenges and the Limitations of Airpower in Support Missions

One of the conditions necessary for the effective use of airpower in ground combat is air superiority, and over the past decade, this has become increasingly difficult to obtain. It is harder to neutralize modern air defense systems, which include advanced SAMs (especially in regular armies) that threaten aircraft, portable SHORAD, and modern anti-tank missiles that can also threaten helicopters, in addition to various sensors and a computerized air picture. Without achieving sufficient freedom of operation, the Air Force's ability to be available for the needs of the ground forces is severely harmed—in surveillance missions, attack missions, transportation of troops, evacuation, and logistics.

Notwithstanding all the technological improvements, the limitations on availability and the central control over airpower that is operated by the Air Force's command and control centers reduce its effectiveness in hitting enemy combatants, which, in the absence of a mission to take territory, has become the key measurement of success, especially with regard to combat in Gaza. According to Maj. Gen. Kobi Barak, "we improved our attack precision from coordinates of eight digits to coordinates of 10, 12, 14, and even 15 digits (z-dimension). The enemy, in contrast, manages to flee from these targets before they are attacked. We hit a coordinate, but we find it hard to hit the enemy" (Barak, 2017, p. 54).

The Air Force is also responsible for defending ground forces from threats in the air domain—using fighter jets, and, from the 1970s, also ground tactical air defense, including anti-aircraft artillery and portable SHORAD that were assigned to the Ground Forces. Over the years, the tactical air defense dwindled until it was finally eliminated a decade ago, and currently air defense for the Ground Forces is provided as part of the theater's air defense by fighter jets and SAM batteries (Winter, 2022).

The aerial threats to ground forces are changing and the Air Force's ability to provide the requisite level of defense has ebbed. As long as the aerial threat consisted primarily of fighter jets and helicopters, the Air Force was able to provide a solution by attacking enemy air bases and landing strips and by intercepting aircraft. The aerial threat to ground troops in the modern battlefield comprises small drones and quadcopters, which are harder to identify and intercept and do not require complex ground assets for operating. Ground Forces operate their own small drones and quadcopters, and the increasing number of UAVs in the battlefield makes it very hard to create precise air picture and down enemy drones.

Thus the lessons learned from the history of the Air Force's role in ground combat suggest that it contributed to logistics and evacuation missions, as well as defending Ground Forces from aerial attack by enemy planes or helicopters. In contrast, on air support missions there were significant shortcomings in most of the wars of the past decades, even though much was invested in force buildup and great effort was put into its application. The difficulties remained unsolved despite the technological advances and even though the IDF established organizational structures to handle them.

Above all, historical analysis shows that the most important reasons for the poor effectiveness of air support were linked to cultural factors, primarily the decentralized and chaotic nature of ground combat something that even advanced technology would probably be unable to alter. Attempts to impose the Air Force's doctrine on the Ground Forces and the promises to dispel the fog of war using intelligence relayed to the rear and to limit clashes with the enemy by means of firepower that is also controlled by headquarters could have the opposite effect: ground forces lacking in independence, which find it hard to operate when the promise of "fused combat" is not realized.

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Lessons from Other Armies: Multi-Domain Battlefield and Network-Centric Warfare

The need to incorporate aerial capabilities in ground combat is not limited to the IDF, and it is therefore worthwhile to learn from other armies that examined innovative doctrines involving network-centric warfare. The US Army developed the Multi-Domain Battlefield (MBD) in a far-reaching study that did not manage to create a doctrine to replace the "air-ground combat" doctrine. This doctrine is supposed to serve the US Army for several generations, in an attempt to unify the various doctrines under one umbrella that provides a full, readily available, and suitable answer for all branches of the military in terms of jointness.

The basic document published by the United States Army Training and Doctrine Command (TRADOC) states that this doctrine addresses the need to "defeat 'hybrid war' and deter adversaries' 'fait accompli' campaigns, employing resilient formations that can operate semi-independently in the expanded operational area while projecting power into or accessing all domains, and converging capabilities to create windows of advantage to enable maneuver" (US Army, 2017, p. 2). If so, it seems that despite the very different nature of IDF operations and those of the US Army (especially in the operating distance from command centers and air support bases), the MDB doctrine was developed to respond to a number of needs, including some that are similar to what the IDF was expected to experience in future campaigns.

To implement the MDB doctrine the tactical combat formations must be capable of conducting combined arms operations, be semi-independent, decentralized, provide mutual support with their embedded capabilities or those available to the lowest feasible tactical rank, and must maneuver semi-autonomously, without secure flanks, constant communication with the headquarters directly above them, or contiguous lines of communication (US Army, 2017). The conclusion reached by those formulating MDB is that independence of operation and the sense of capability by the ground forces are critical to winning the battle.

Research that examines the French army's experience with network-centric warfare in relatively extensive operations in Afghanistan, Africa, and Lebanon also mainly addresses the cultural elements, which, according to French officers, make it hard to get the most out of technology under combat conditions: "French officers have high regard for the benefits of Blue Force tracking [a system that digitally identifies friendly units] and are impressed by the potential benefits for logistics and sustainment. By no means, however, do they believe that the technology changes how they operate in any fundamental way...Some also worry that the technology will lead to greater centralization and micromanagement, which are contrary to the French Army's current emphasis on autonomous action by lower echelon commanders" (Shurkin et al., 2022, pp. x-xi).

The IDF is fundamentally different from the US Army, which is one of the services and is focused exclusively on ground combat, and from the French army, which is primarily an expeditionary force, dispatched to various regions. The doctrine of "army aviation," as explained below, also does not suggest that fighter jets for close air support become an organic part of the ground forces and be operated directly by them.

Nonetheless, the lessons learned by these armies invite relevant conclusions for the IDF. The most important is that the fundamental question, which still has not been resolved, is the different perspective of the ground commander, whose image of the battle, even with the most advanced technology, will never be as clear as that of an Air Force commander. There is concern, therefore, that if the maneuvering force is dependent on intelligence resources and firepower, provided to it from the rear and under centralized control, this could paralyze the forces in the middle of combat, under the strain of a large battle and with the enemy trying to sabotage the lines of communications. Even the best technology, and even on the as yet unproven assumption that it would indeed work under combat conditions, will not resolve this problem.

The Challenges of Technology

Computer networking technology and the automation of the decision making process play a central role in the current doctrine of jointness. For many in the IDF, it is a basic assumption that it will be possible to use these technologies successfully in the next war. Some explain that any reluctance to adopt this assumption stems from a fear of technological innovation and of technology-based doctrines.

It is doubtful that this argument holds much water. Any complex and groundbreaking technology that depends on communication between many different systems is liable to have flaws, which will take many long stages of trial and error to fix. The integration of any technological systems, even those that have already been tried successfully in their isolated components, will entail similar difficulties. It is doubtful whether one can rely as completely as necessary on these technologies during wartime, where, in addition to technological difficulties, there are also issues of distance, material damage, and an active and agitating enemy. This is even more the case when it comes to artificial intelligence, a field that is still in its infancy even in the civilian sphere.

The first notable difficulty is in the ability to ensure that the computer systems and the network that connects them operate properly, not only between the headquarters, but also between the tactical units. The usage demands of such a network are increasing, as is the capacity that the network must provide. The result is the potential for a gulf between the vision of networking capabilities and its assurance at tactical levels. The IDF's new doctrine creates a dependency on continuous communication between units on various levels, and the difficulty in ensuring that there is adequate infrastructure before the next war may undermine operational capability.

Another difficulty is in the difficulty in developing artificial intelligence applications for decision making, especially for complex situations. The difficulty for military decision making applications stems from the potential for malfunctions, the severity of such malfunctions when they occur, and the gaps in confidence using the systems (Deuer, 2022).

"War is the realm of uncertainty," which makes it harder to teach decision making to systems in this situation. The gulfs between the assumptions made by the person developing the application and the reality of war could be massive, since changes are not only random, but also the result of the action of an enemy that operates under conditions that are different from those that the application "learned," and is constantly trying to deceive and surprise. These conditions of uncertainty require flexibility and the ability to improvise, which are human capabilities that artificial intelligence systems are hard pressed to create in real time. Most of the civilian artificial intelligence systems are not equipped to deal with "enemies," and those that are (such as antifraud systems) operate in defined and limited conditions (Akavia & Yehuda, 2021).

Artificial intelligence systems embody great potential when it comes to combat procedures and combat management, but the problems that have arisen with similar systems in a civilian setting and the unique characteristics of a battlefield, which make it particularly hard to predict what will happen, require us to tread very cautiously in the development of such systems. The development and deployment process must include comprehensive simulative testing and in-depth critical analysis. In light of all this, relying on artificial intelligence technology as the foundation for the operation of a multi-service force of airpower in a ground battle is too great a risk for the next war-and for the foreseeable future.

But most problematic could be the impact of such a failure on a commander in battle, who has been trained to rely on technology and to view it as the magic solution that dispels the fog of war and nullifies the physical and conscious distance between him and the hierarchy above him. He could experience a loss of faith and have difficulty functioning under conditions that demand that he make independent decisions despite the uncertainty, when most of his prewar training was dedicated to integrating the new technology that has just failed, rather than learning how to get along without it. Based on the experience of the IDF and other militaries, technological solutions and centralized control may engender trust in theory, but in practice, do not pass the test.

Contemporary Force Buildup, Controlled by the Air Force

Even today, the IDF adheres to the doctrine whereby aerial assets are built up and operated under the full control of the Air Force. Although the Ground Forces do acquire small intelligence gathering aircraft (such as Skylark UAVs and quadcopters), most of the needs of divisions are supposed to come from assets operated by the Air Force—manned aircraft and unmanned vehicles such as the MALE UAVs and the smaller Spark UAVs. This differs from other militaries, such as the US, British, German, and French, where the Ground Forces have broader responsibility for developing and using of army aviation and air defense.

The IDF's response to improve air support is through manpower and technology. Massive manpower and resource intensive efforts were made on two fronts: more manpower at the headquarters and command and control centers, coupled with advanced technology designed to create joint networking even under combat conditions.

On the organizational level, the coordination systems between the Air Force and the Ground Forces were bolstered at headquarters and within the maneuver units, with the creation of manpower-intense command and control centers: "fire centers" were set up in the regional commands, in conjunction with the Air Force and under the command of officers from the Air Force, which replaced similar organizations that focused in the past on planning the use of artillery fire (Melamed, 2019). In addition, the Air Force expanded the organizations that are responsible for air support to Ground Forces, the Cooperation unit, and the air support department, under the command of a specially appointed brigadier general (Gonen, 2014). The number of Air Force liaison officers in the maneuvering units is increasing, as Kochavi stated in his speech.

However, manpower intensive mechanisms, as well as reliance on highly advanced technology, have limitations and weaknesses. Coordination systems do not necessarily offer a solution to the question of prioritizing the allocation of available resources between many real-time demands. At most, they handle the implementation of the priorities once they have been determined. A series of decisions by humans is still needed to address the allocation of resources, especially when there are shortages or there is a risk to the aircraft. Therefore, only a limited reduction in the time taken by human coordination mechanisms can be expected, since decision making takes time.

Moreover, the challenge of maintaining proficiency levels becomes even harder the more that these mechanisms include more people, and the more these people must be trained to make more sophisticated use of resources under complex conditions. The difficulty in maintaining the proficiency levels of many more people could lead to a drop in proficiency levels, which would reduce willingness to give them operational authorities, thereby canceling the very result that decentralization was supposed to achieve.

Several IDF officers have written articles in which they proposed various ways of expanding the army aviation by deploying a large number of small UAVs for intelligence gathering operations, which would provide the intelligence that allows for a rapid offensive closure, especially against targets in an urban area; in addition, UAVs would provide radio communication relay, which is considered a critical gap on the ground. According to some of these proposals, such as that submitted by Kobi Barak (2017), a fleet of autonomous aircraft must also perform transport missions, replacing helicopters that are under heavy threat in the modern field of combat. Other proposals for implementing a ground fleet include relying on a broad infrastructure of internet communications (Ortal, 2016), as well as decentralizing the operation of UAVs to the level of battalion, brigade, and division, as is the case in the US Army (Rich, 2022).

In practice, it is the Air Force that is responsible for the force buildup and operation of aerial platforms within the IDF, above the lowest tactical level. According to the prevalent approach, the Air Force should not only be responsible for the deployment of fighter jets and helicopters, but also the IDF's key UAV capabilities: MALE UAVs with air-ground attack capability are operated by the Air Force's squadrons, as well as the new Spark array, designed "to create a fusion of data and rapid and effective operational closure" (IDF website, 2022).

An Alternative Proposal: Independence for the Maneuvering Force, with the Establishment of Army Aviation

We propose examining a different alternativebolstering the independence of the Ground Forces during combat, including with aerial assets under the structural authority of the ground commander. This proposal is an adaption of the accepted approach in Ground Forces across the world, including the United States, United Kingdom, France, and Germany. In these militaries, the army aviation includes attack, utility, and transport helicopters; in some militaries, it also includes UAVs and even cargo planes. Ground forces are likewise responsible for their air defense in the battlefield, from tactical SHORAD to regional air defense for the divisions and the armies. The US Army operates UAVs, from small drones on the battalion level to larger UAVs (Gray Eagle) on the division level, and tactical air defense systems such as the Avenger systems to PATRIOT and THAAD systems for regional defense (FM 3-04 Army Aviation, 2020; FM 3-10 U.S. Army Air, 2020).

The implementation of army aviation in the IDF must suit its unique characteristics. Not all uses of airpower in ground combat obligate the use of an army aviation framework. Fighter jets, for example, are operated by units in the Air Force, even when they are assets that are used to support ground combat, as the A-10 planes in the US Air Force.

The proposal for the establishment of an army aviation unit also relies on technological opportunities, like the current approach in the IDF to bolster jointness, as described by Kochavi. However, those required for army aviation are more proven and estabblished, and they are especially more suited to the worldview of a ground commander and the real capabilities of the ground force to make the most of aerial assets.

What Should be in the Ground Forces' Domain?

Deciding which authorities and responsibilities should be given to the Ground Forces regarding force buildup and application involve the following considerations:

- Which capabilities provide maximum benefit, especially in terms of the relevance and availability needed for immediate use in combat.
- b. What is the maximum number of platforms that allow for effective centralized command of the Air Force.
- c. What capabilities can be contained by the Ground Forces, both in terms of force buildup and application, under the complex conditions and uncertainty that characterize ground combat.

In accordance with these criteria, the division of responsibility should be as follows:

Intelligence collection and attack in maneuver warfare are two central needs where most responsibility and authority should be given to the Ground Forces. According to this approach, the immediate airpower for collection and attack-primarily UAVs, but also attack helicopters (as long as they are in use)—is an integral part of the Ground Forces and operated independently, without reliance on fire support teams under the command of a rear headquarters. The low- and mediumaltitude aerial assets used will be an organic part of the force, in the framework of a battalion tactical group or brigade tactical group, similar to the current organic nature of tanks, artillery, infantry, and engineering in combat units. This structure maintains the ability to receive intelligence from central sources and allocate firepower, although this is not a precondition for the actual deployment of the maneuvering force. The ground commander can, therefore, overcome the limitations created by combat conditions or technological limitations, and act according to its best judgment even without a full picture of the combat zone or full and immediate access to firepower from the rear.

The evident advantages of this are the ability to synergize the operation of aerial intelligence collection and attack assets with the ground assets in the hands of the Ground Forces; rapid response time against an agile and lowsignature enemy; and the total understanding of the location and the immediate needs of the ground troops.

The relative simplicity of the logistics and operational deployment of UAVs allows them to be operated by the Ground Forces independently and with operational autonomy. This does not apply only to quadcopter, which can fly for half an hour at a low altitude, but also UAVs that can remain in medium altitude over a broad area in order to identify targets and warn about threats. In the current IDF array, this includes the Hermes 450 for intelligence collection and attack UAVs, and the Spark array, whereby swarms of UAVs will "control" a certain area for intelligence collection and attack needs. These assets will be used optimally in battlefield when the independently maneuvering ground unit can control the aerial assets it needs.

In the medium and long term, attack helicopters will likely be replaced by UAVs, which can be controlled entirely by ground units. When unmanned alternatives for evacuation missions (such as an unmanned transportation helicopter, which is already being tested in the United States) or logistics missions (by large drones) are developed, they can be suited to the proposed approach and will also be deployed under the command of the Ground Forces, while gradually replacing the assets operated by the Air Force for these missions.

A solution to the logistical complexity of operating fleets of UAVs could be provided by Air Force support, which would provide take-off, landing, and maintenance services to the large UAVs in the Air Force bases, just as it gets important logistics services from the Army. In the short term, both force buildup and maintenance of fleet of attack helicopters will remain with the Air Force, due to the complexity of force buildup and maintenance.

Air defense for ground units can be an additional area of responsibility for the Ground Forces. This is to provide an immediate answer, using close coordination, to a new threat posed by the enemy: quadcopters, UAVs, and loitering munitions, most of which are small, slow, and fly at low altitude, and are operated widely and in the same areas in which the IDF deploys assets with similar characteristics. These characteristics make the primary air defense assets of the Air Force a lot less relevant when it comes to protecting ground troops. It is possible that in order to fully implement this approach, the IDF will have to develop and acquire additional resources, but this does not change the guiding principle behind the approach proposed here: maximum independence for the Ground Forces, putting all of the assets that are not manned aircraft or heavy UAVs under its control and creating decision making and operative capabilities that are not dependent on officials who are stationed in the rear or on technology that would probably not work effectively in combat conditions.

Some capabilities and missions should remain within the Air Force as part of the General Staff's airpower and not be given to the Ground Forces. First are capabilities that need manned aircraft, because of the great complexity of establishing and operating manned airpower, and the need to consider elements of freedom of aerial operation as part of aerial missions. The main capabilities of an aerial force in combat, which currently require manned aircraft, are attacks on infrastructure with heavy munitions using fighter planes, raids in attack helicopters, medical evacuation from combat zones, and forward aerial logistics.

Second are missions characterized by long lead time for planning (several hours) that do not need an immediate picture of the ground forces and their needs, such as interdiction and isolation of the combat zone, attacks on logistic sites and logistic convoys, and attacks on fortifications and buildings ahead of the ground maneuver. The long lead time that is required for these missions allows for complex inter-service planning coordination, without impinging on the quality of the answer provided to the needs of the ground combat.

Third, missions where ground forces are just one of the consumers, such as extended range intelligence areas beyond the ground combat zone, should be left with the General Staff.

Moreover, it is clear that the change will allow the Air Force to focus on those missions in the campaign that it should lead and in which it will be the main force in the IDF, primarily attacks on distant enemies, attacks on strategic targets deep in enemy territory, and attacks on the long-range missiles, air superiority, and logistic arrays, as well as preparation for a preemptive strike at the start of the campaign.

Effects on Ground Force Capabilities

According to the proposed approach, the ground unit will engage in operations in a kind of three-dimensional "bubble," which will be defined by the assigned mission and the organic assets at its disposal, and in which it will control the aerial assets required. The regional command and the General Staff, including the airpower at their disposal, will play a support role in this arrangement, in part according to a support missions plan that will be drawn up in advance—attacking targets before the beginning of the ground battle, air interdiction to prevent enemy troops entering the "bubble," destroying fortified targets, and large scale logistic and evacuation missions.

This operational approach suits the worldview of the Ground Force command and its ability to use the assets at its disposal in the heat of combat. Instead of a "support force" operated by the "invisible hand" of technology, whose performance or availability in battle cannot be controlled by the commander, the Ground Force will have an integrated and organic aerial force that in its view is no different from the assets that are already under its command. It will be able to operate the aerial assets with a high level of urgency, with a profound understanding of what they can contribute, and not sit around waiting until intelligence or firepower arrives from the rear.

According to the proposed approach, the ground unit will engage in operations in a kind of threedimensional "bubble," which will be defined by the assigned mission and the organic assets at its disposal, and in which it will control the aerial assets required.

Risks, Costs, and Challenges

Potential Diminished Ability to Carry Out Missions

A key component of the proposal is reducing the role that the Air Force plays in attack missions in ground combat, especially with combat helicopters, and increasing the role of assets controlled by the Ground Forces mainly UAVs and precision ground munitions for these missions. One of the risks involved in this proposal is a significant reduction in the number of air support strikes using heavy munitions, whose main damage effect helps neutralize threats from large structures, e.g., buildings, and to create shock in the attack zone.

However, in support missions, the growing inventory of precision ground munitions provides a sufficient answer to the need for attacking those buildings. For this, the array of ground firepower, especially precision missiles, should be enlarged and strengthened and equipped with heavier warheads, which will bridge the existing gap between the 20-kilogram warhead 122mm accurate rockets and the light munitions deployed from aircraft. The US Army's ground force is currently equipped with a variety of missiles that can reach distances of dozens if not hundreds of kilometers with warheads of hundreds of kilograms, and the EXTRA (Extended Range Artillery) artillery rocket system manufactured by Israel has a warhead of 120 kilograms. This variety of firepower, all of which is under the direct command of the Ground Forces commander, could have the desired

effect during combat—rapid neutralization of fire from within structures during combat in a built-up area. The precision missiles that the Ground Forces possess have an advantage over an attack from a helicopter in that the firepower is more accessible and quicker, thanks to the simplicity of coordination between the support force and the units it supports. The range of the missiles allows for precision strikes across the maneuver area.

Giving Ground Forces responsibility for a defined geographical area near the border may affect the Air Force's ability to carry out its missions in and adjacent to that area: primarily, the air defense of the State of Israel; strikes on surface-to-surface missile and rockets; and achievement of air superiority, which allows freedom of operation for the Air Force. These missions cannot be broken down into geographical area "pieces."

Air defense and missile defense include detection and interception of aircraft and missiles as they fly through the airspace above the ground combat, as well as location and attack of launchers even when they are located within the ground combat zone. Attacks on missiles and rockets launchers in the combat zone can be launched by the Ground Forces, but the planning and execution of the entire mission demand a much broader perspective, which understands the enemy's arrays and the elements of Israel's offensive and defensive response. Dealing with surface-to-surface missiles and rockets is more than attacks on launchers that pop up suddenly; full attention must also be given to the command-andcontrol elements, logistics, launch units, and the missiles themselves, using intelligence, attack, and interception.

Ensuring freedom of aerial operation against enemy air defense systems will also entail dealing with those systems that are located in the area for which the Ground Forces are responsible; in these cases too, critical are an overview of the enemy's air defense systems and the various responses Israel has to these threats-confronting the enemy's detection and command and control systems and its surfaceto-air missiles and electronic warfare systems, while integrating intelligence means, attack, and electronic warfare, and planning how the force will be deployed. Those components of air defense that are under the geographical responsibility of the Ground Forces are just a small part of the overall picture. For the Air Force to execute its missions, it requires a response that will allow it to operate effectively in the area of the ground troops, while minimizing as much as possible the risk that ground units will be attacked from the air, and the risk of shooting down the UAVs of army aviation by the Air Force's air defense.

Another threat to freedom of aerial operation is the danger that the Ground Forces' local air defense poses to the Air Force's aircraft: first, because of the Ground Forces' responsibility and authority to defend themselves from aerial threats by intercepting and downing them; second, given the fact that the two services operate aerial assets in the same area, and the difficulty in managing an "aerial picture" of so many vehicles, some of which are operated by small ground units deployed across the area.

These risks can be addressed with a response based on three principles:

- a. Air Force responsibility for specific missions within the divisional space (achieving air superiority and attacking the enemy's medium and long-range missile and rocket systems), given that it can carry out most of its operation while operating above the divisional airspace.
- b. A shared picture between the Ground Forces and the Air Force (a picture of our troops and an aerial picture), which will also be shared with the lower levels, allowing the use of aerial assets in the same area with a low risk: low risk of collision between Air Force's and Ground Forces' aerial assets, and low risk of friendly fire incidents. The vast majority of the aircraft will be operated in the divisional area with UAVs, which, if downed,

would not be a serious loss, and therefore computerized solutions to a common picture may be sufficient.

c. Reducing the need for Air Force vehicles to enter the divisional area, thanks to the independent use of aerial assets by the division. The use of helicopters during combat—assault helicopters for rescue and evacuation or attack helicopters for offensive missions—will still demand a solution based on coordination. The joint air picture will help to reduce the risks.

Force Buildup Costs

Decentralizing UAVs among the Ground Forces also has the potential to incur a high cost. First, a centralized system allows for more efficient use of resources in force buildup, while avoiding duplication. Decentralization naturally leads to superfluous acquisition, since each service needs to develop a full response for its needs. Second, decentralization of UAV capability entails overhead necessary for operationpersonnel, infrastructure, and maintenancewhich would be reduced under a centralized system. Third, all UAV fleets make use of the electromagnetic spectrum as a shared and limited resource for communications, and decentralization could make it hard to use this resource flexibly and efficiently and could create general difficulties by reducing operational flexibility.

Finally, effective aerial force buildup, including UAVs, requires the development and maintenance over time of a large variety of knowhow and expertise that at the moment exist only in the Air Force. This includes characterizing particular weapons, engineering knowledge, operational know-how needed to formulate doctrines, and more. The development and maintenance of aerial force buildup capability require resources to set up the organizations that will have the knowledge for aerial force buildup for the Ground Forces—experts and processes. Even before the Ground Forces can build their aerial force, investment will have to be made in the organization and in creating organization duplication with the Air Force.

These costs can be reduced by adhering to the following principles:

- a. Direction from the General Staff for UAV fleets that are joint systems for the Air Force and the Ground Forces.
- b. Regulation from the General Staff governing the use of the electromagnetic spectrum and joint communication infrastructure, similar to the operational internet doctrine.
- c. Preference for a ground force fleet that requires little infrastructure.
- d. Use of Air Force bases as providers of logistical support services for the larger UAVs in the army aviation.

The concept of army aviation should also be viewed as a springboard for promoting an organizational culture and a sense of capability in the Ground Forces, which will bring it closer to the expected standards in the Air Force.

The Change from the Air Force Perspective Likely vehement opposition from within the Air Force will not allow for the transfer of responsibility for aerial force buildup and application to the Ground Forces. The challenge is not just that there is a potential threat to the Air Force's ability to carry out its missions, but also that the Air Force could perceive the change as a threat to its relevance (which would be reduced if the Air Force were called on for Ground Force support missions) and to the resources it is currently allocated (primarily the acquisition of UAVs and helicopters, as well as the personnel needed to operate the complex coordination mechanisms).

To allow the change to happen, it is important that the Air Force see it more as a catalyst for growth rather than a source of threat. More than 20 years ago, then-Air Force Commander Dan Halutz wanted the Air Force "to become an architect of the campaign rather than a contractor for bombing," but his vision was never realized. Within the Air Force, the attention of commanders and the organization as a whole is currently focused on the precise execution of the numerous missions it is tasked with, but in many of those missions, the systemic vision, the formulation of an operational plan, and the intelligence assessment for the mission are carried out outside the Air Force.

Reducing some of the Air Force's air support missions in frontline combat will allow it to dedicate more organizational and commandlevel attention and more personnel to the operational-level planning and to formulation of new doctrines and operations concepts for its missions. As such, it could return to the direction envisaged by Halutz, strengthen its influence within the operational level, and focus on those missions for which it is the State of Israel's primary force: operations deep in the territories of close enemies, operations against enemies without mutual borders, air defense of all aspects, and achievement of air superiority.

The Change from the General Staff Perspective

In recent years, the General Staff has concentrated much authority in its hands that in the past was distributed between IDF services and regional commands. There were many reasons for this, including the focus on routine security and the campaign between wars, the desire to integrate innovation from the top to the bottom, and the search for efficiency in firepower and force buildup through centralized management.

In routine times and in the campaign between wars, the General Staff manages operational planning closely and in minute detail, and it adopts a similar pattern for operations in war too, by expanding its planning and supervision mechanisms over operational plans and their execution. An example of this is the establishment of a powerful "firepower cell" in its Operations Directorate.

A doctrine that grants greater independence to the Ground Forces in using firepower and force buildup will reduce the need for the General Staff to be involved at a high resolution, both for the use of firepower and force buildup. It will allow the General Staff to serve as an example of willingness to accept a more decentralized command, which increases the independence and authority of the units under it, to create the kind of command that will be needed in the case of a multi-front war. The more the General Staff centralizes power when it comes to using firepower and force buildup, the more the services and regional commands will find it difficult to develop their own firepower and force buildup capabilities.

The Role of the Political Leadership vis-à-vis the Required Change

None of the alternatives presented-the current force buildup of the IDF or the proposal for army aviation-are significant without an entire process spearheaded by the political leadership, which sets the goal of a strategy for the IDF. The strategy is the cornerstone for coherent operational doctrines and trust among the ranks that there is indeed every intention to use this alternative when needed. These conditions do not currently exist in Israel. This manifests itself in all of the campaigns since the Second Lebanon War and has exacerbated the sense within the IDF in general and the Ground Forces in particular that there is no real intention to execute a ground maneuver during a large campaign (Tzur, 2017).

The Subcommittee for Security Doctrine and Force Buildup, which is part of the Knesset's Foreign Affairs and Defense Committee, in a report about the Gideon five-year plan, detailed the preferred process for weighty decisions such as force buildup (Foreign Affairs and Defense Committee, 2017). According to the report, the political echelon, under the leadership of the Prime Minister, must formulate and approve the national security doctrine, from which the role of each body in the security establishment will be derived; the Defense Minister must lead a process that leads to the formulation of an operational doctrine for the IDF, from which operational plans and force buildup will be derived.

This process must occur for such an important decision as the one discussed here, not only in terms of Ground Force buildup but also to relay to all ranks that there is a plan to build a ground array capable of carrying out significant maneuvers during combat and to use it when the time comes. The Defense Minister must oversee implementation of the decision by the General Staff and approve acquisitions and the resulting integration plans. There is a precedent for this in the IDF, when in 1983, then-Defense Minister Moshe Arens spearheaded the decision to establish the Ground Forces Command, which would eventually become the Israeli Ground Forces.

Similar Changes in Other Militaries: The Howze Board

In the early 1960s, as involvement in Vietnam intensified, the US defense leadership was worried that its ground forces were hard pressed to deploy the capabilities provided by aerial systems, primarily helicopters, and that it would be preferable to rely on familiar ground systems for logistics and combat. Defense Secretary Robert McNamara demanded that the army examine "a plan for implementing fresh and perhaps unorthodox concepts which will give us a significant increase in mobility" (Bonin, 2006, p. 53).

General Hamilton Howze was appointed to head the committee that examined the aerial needs of the army. He himself was from the Ground Forces and not the Air Force, and he served in the Armored Division during World War II. Therefore, he had a profound knowledge of the needs and character of the ground force, as well as original thinking and experience in combining aerial resources, which he gained during his previous position as the first director of Army Aviation in 1955. Howze was given just 90 days to submit his report and under his command were placed many parachute units and a significant quantity of helicopters and transport planes for training, as well as civilian research institutes such the RAND Corporation and Stanford University, which helped analyze the data and prepare exercises and war games.

The Howze Board recommended the establishment of an Air Assault Division, equipped with no fewer than 459 planes and transport helicopters, firepower, and logistical support, which would be capable of penetrating quickly deep into enemy territory and engage in independent combat. The committee recommended the close air support force should be organic within the ground force framework. Howze explained his recommendation thus:

There are many missions...which absolutely require for effectiveness the most intimate coordination with ground combat elements infantry, tanks, and armor...and the responsiveness also necessary can only be achieved if the pilots are part of and under command of the ground elements, live with them, and operate their aircraft from fields close to the headquarters they serve. (Bonin, 2006, p. 65)

Then-Commander of the US Air Force, General Curtis LeMay, came out strongly against the report, arguing that the model proposed was only suitable for combat in Vietnam. LeMay added, "I cannot agree with the Army designing forces and establishing mission requirements for aircraft which duplicate an already existing and proven force, and one which can be expanded to meet any valid Army requirements" (Bonin, 2006, p. 66).

McNamara ordered the creation of a special unit to test the board's main recommendation. The United States Senate Committee on Armed Services held a comprehensive hearing on the subject and the trials lasted for more than two years, ending with the establishment of two airborne divisions, the 1st Cavalry Division and the 101st Airborne Division.

The process behind the Howze Board suggests that in order to bring about a successful

process of change, which challenges preexisting doctrine and the organic independence of existing bodies, all of the participating bodies must rally round the vision—the political leaders, the General Staff, and the respective branches. The doctrinal development should be entrusted into the hands of the main "client" of the project, in this case, the Ground Forces, which will, of course, be assisted by people from the Air Force. External experts should be involved in the process as much as possible since they will provide perspectives and analytical tools that will challenge the decision makers and help them sharpen their conclusions.

The current IDF doctrine contains risks, because it relies in its entirety on unproven or theoretical technological capabilities, but above all, because it denies the independence of the Ground Forces and clashes with its needs and view of reality under the special conditions of the battlefield.

> The conclusions should be examined as broadly as possible and not just by setting up small, experimental units that, by their very nature, will not be able to examine how the new doctrine would perform on a significant scale, faithfully replicating what will be needed during actual conflict. In the end, the decision makers among the higher ranks must give their unequivocal support, since they have the ability to overcome the inherent objections of people seeking to maintain the status quo, while taking responsibility for the outcomes.

Conclusion

The jointness doctrine reflects the IDF's approach to aerial operations in the framework of ground combat. Following the transformation of battlefield and technological opportunities, the IDF chose to keep the jointness doctrine and realize it using other means—multiple aircraft, broad connectivity between all of the forces in the battlefield, and the use of artificial intelligence for decision making in the deployment of these assets.

The current IDF doctrine contains risks, because it relies in its entirety on unproven or theoretical technological capabilities, but above all, because it denies the independence of the Ground Forces and clashes with its needs and view of reality under the special conditions of the battlefield. These factors have already led to failures in jointness between the aerial and ground forces within the IDF. The currently existing and emerging technologies cannot satisfactorily resolve these issues with any degree of certainty, and the price of possible failure could be catastrophic.

Our proposal is to adopt a different approach, designed to bolster the independence of the Ground Forces and reduce its reliance on the Air Force. Implementing this approach will occur by means of a ground fleet, operated under the authority of the Ground Forces during combat and built under the authority of the Ground Forces during non-war times. An army aviation force of this sort must afford independent and maximal freedom of operation to the Ground Forces on the battlefield, and accordingly, include UAVs, including the types and sizes for which the IDF currently places responsibility on the Air Force for development and combat deployment.

Manned airpower will be operated by the Air Force in the future too, and it will still have important combat missions. However, already today technology allows the IDF to provide ground units with a wide range of solutions in the two realms that it struggles to get a solution from the rear headquarters-real time intelligence and attack capabilities against most of the relevant targets, and self air defense capabilities against aerial threats in the modern battlefield. Expanding the responsibility of the Ground Forces allows the examination of a balanced response between ground assets and unmanned aerial assets, and manned assets, which given the operational complexity must remain under the responsibility of the Air Force, and with their effectiveness limited by the threats of the modern battlefield.

Strengthening the independence of the Ground Forces in combat and increasing their responsibility for force buildup will generate additional important achievements: it will bolster the Ground Force's confidence in its capabilities on the future battlefield, including ground maneuvers; the Air Force will be able to focus on its exclusive missions, while increasing its dominance in doctrine formulation, force buildup, and system-wide planning; and it will allow the General Staff to free itself from the micromanagement of intra-service force buildup and intra-service jointness in combat.

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