

IAF's Small Wars: Israeli Air Force Experience in Low Intensity Conflicts, 1982 – 2006

*By Tamir Libel, just completed his PhD in Israel*¹

The Israeli Air Force (IAF) is reputedly one of the most effective of its kind due to its contribution to Israel's defeat of Arab armed forces in High Intensity Conflicts (HIC) in the second half of the twentieth century. Whilst its exploits in these campaigns have been well documented, less is known about its adaptation to the Low Intensity Conflict operational environment that has emerged over the past two decades. This article will analyze this process of adaptation, focusing primarily on operational and organizational ramifications. In the period under review, 1982 - 2006, the IDF was involved in five campaigns: the First Lebanon War (1982 - 1985); The occupation of the Southern Lebanese 'Security Zone' (1985 - 2000); the First Intifada (1987- 1993);² the Second Intifada (2000 - 2005); and the Second Lebanon War (2006). A number of phases in each of these prolonged campaigns took the form of Low Intensity Conflicts. In contrast to its earlier experience with counter-terrorism and guerrilla operations, these campaigns forced the IAF to change.³

The article will first examine the development of the role of the IAF and its doctrine, especially in regard to air-ground cooperation. Subsequently, the article will analyze four aspects of IAF activity during the relevant conflicts: use of fighter-bombers; development of transport and attack helicopter arrays; development of the UAV array; air-ground coordination mechanisms; and doctrine. The article will conclude with an appraisal of IAF adaptation to the new challenges posed by Low Intensity Conflicts.

1. Historical background

The disparity between Israel and its enemies, the desire to minimize the cost of war (both in terms of human and resource cost), and the fear of superpower intervention forced the Israel Defense Force (IDF) to seek means of achieving quick decisive victories. In addition, Israel hoped that decisive victories would persuade the Arabs to choose the path of peace.⁴ The IDF adopted an offensive military doctrine and a ground forces-based force structure.⁵ Within this scheme, airpower served in a supporting role.⁶ Having achieved air superiority over the battlefield, the IAF was expected

to support ground operations, screen the mobilization of the reserve and then participate in the counter offensive.⁷ Thus, it played a central role in High Intensity Conflicts.⁸ However, until the Six Day War (1967) the IAF was excluded from LIC counter-terrorism activities. One reason was the lack of capabilities, especially reliable helicopters. Additionally, IAF senior command was preoccupied with planning and training for high intensity combat (HIC). They hardly considered the possibility of employing airpower for any other end. IAF involvement in counter-terrorism operations began after the occupation of the West Bank and the Gaza strip (1967).

Though the IAF focused on LIC scenarios, it encountered difficulties in fulfilling the primary task of assisting ground operations.⁹ Such was the case during the acclaimed Six Day War campaigns. Although it had destroyed the Egyptian, Syrian and Jordanian air forces during the first two days, it proved unable to support the ground forces effectively. The difficulty lay in the inadequate coordination mechanisms and a lack of understanding of IAF capabilities, needs, and procedures by the ground forces.

Similar problems reappeared during the 1973 and the 1982 Wars. The circumstances of the former forced the IAF to support ground forces before having achieved air superiority. During the latter conflict, though, the IAF had gained air superiority early on. The air support of the land campaign remained insufficient.¹⁰ The IAF was unable to offer close air support on the tactical level, and its operational and strategic campaigns were not coordinated with ground forces. Still, by 1982 close air support capabilities had improved through the deployment of attack helicopters acquired as a result of lessons learned from the Yom Kippur War.¹¹ Helicopters were adopted as a response to the harrowing casualties suffered during the war rather than as a result of careful long-term planning. The decision to involve the IAF in counter-terrorism operations followed a similar course.

After the 1967 War, the IDF fought a successful but protracted and bloody campaign to stem the flow of terrorists across the Jordan River. IAF helicopters were used to increase infantry and paratrooper mobility while its fighter-bombers attacked terrorist bases in Jordan.¹² Over the following decades the IAF broadened and improved these capabilities.

2. The security zone: 1985 - 2000

2.1. Background

The 'Security Zone' in Southern Lebanon was formally established in 1985 following the IDF retreat from the areas captured during the First Lebanon War (1982).¹³ The tenets of the Security Zone were decided in light of a study of the local social, political, economic, and military conditions: First, the Security Zone was to serve as a buffer between the guerrilla fighters and Israel, hence the IDF would maintain operational freedom within its borders. Second, it was decided that civilian mobilization efforts would center on Christian and Druze villagers rather than on the Shia majority. Third, Israel armed and trained a local militia, the South Lebanon Army (SLA), to assist in policing the area and preventing terrorist activity. Fourth, planners sought to minimize the number of civilians within the Security Zone.¹⁴

2.2. Fighter-bombers

During the First Lebanon War, especially from 1982 through 1983, Israel conducted air strikes against terrorist targets in order to develop a measure of deterrence. This simplistic policy of coercive diplomacy failed miserably, forcing the IAF to re-evaluate its methods.¹⁵ These efforts culminated in the issuing of new guidelines in 1987. According to the new procedures, air raids would be conducted only on the basis of precise intelligence and following a risk-assessment. Senior command would determine appropriate risk-value ratios; as a rule, they were willing to pay much for high value targets. The raids were still hampered by the lengthily process of translating real-time intelligence into sortie mission orders.¹⁶ The new guidelines were driven by the decision of then Minister of Defense Yitzhak Rabin who stipulated that terrorism was to be fought with minimum risk because it did not pose a fundamental threat to Israel's national security.¹⁷

The decision to rely on IAF raids was met with much opposition within the ranks of the IDF. Some officers held that ground forces special operations offered better means of combating terrorist activity in the Security Zone.¹⁸ The controversy persisted until the IDF retreated unilaterally from the Security Zone in the year 2000. Nevertheless, the number of air raids into Southern Lebanon increased significantly from 1997 through 2000. The reasons cited for this activity were similar to those

expressed during the 1980s. Thus, the head of the IAF operations branch (G-3) argued in 1998 that the IAF was a more effective and flexible operational tool. He added that the IAF offered precise and destructive capabilities with minimal danger to Israeli forces. The IAF was able to maintain a high-level of offensive operations using precision guided munitions.¹⁹

2.3. Transport and attack helicopters

Beginning in the early 1990s, the IAF deployed transport and attack helicopters in forward bases near the Israel-Lebanon border. During that period, helicopters were deployed primarily in small-scale operations with the exception of operations 'Accountability' (July 1993) and 'Grapes of Wrath' (April 1996). Transport helicopters were used routinely for evacuation and transport of ground forces personnel.²⁰ Relying on helicopter enabled mobility, the troops were able to cut off retreating Hezbollah guerrillas operating within the Security Zone.²¹ Attack helicopters also operated routinely in the Security Zone during the 1980s and 1990s. Averaging two missions weekly outside the Security Zone, the Cobras constituted the primary IAF tool for combating terrorist activity from Lebanon.²² Their capabilities (continuously improved) enabled provision of close air support and minimal collateral damage surgical strike attacks against terrorist targets.²³ Consequently, pilots won considerable operational experience, though in limited small-scale operations.

All this activity notwithstanding, the IDF was unable to realize the full potential of the helicopters. This was due in part to IAF's refusal to assign helicopters to Northern Command. The IAF even maintained operational control over the helicopters deployed in forward bases within Northern Command. Helicopters were allocated to the ground forces only for individual missions and through an officer of the Unit for Cooperation. During peace-time the latter were charged with planning and conducting joint training; in combat situations they served as air-ground liaison officers.²⁴ The IAF also put severe restrictions on the use of the helicopters, as it considered the loss of one to Hezbollah fire as a major blow to Israeli airpower deterrence.²⁵ The helicopter squadrons were also hampered by doctrine, resources, safety and training shortcomings. First, they lacked doctrinal publications for all-weather flying. Second, flight procedures required upgrading and formalization. Third, a lack of joint training with the ground forces curtailed operational cooperation. These

shortcomings were a contributing factor in the 1997 mid-air collision between two CH-53s flying a routine reinforcement mission into the Security Zone resulting in the loss of all 72 souls aboard. Consequently, the IAF established the position of Deputy Head of the IAF Operations for Helicopters, responsible for addressing these very issues.²⁶

2.4. UAVs

One of the primary lessons the IAF derived from the 1982 War was the need to reorganize the Visual Intelligence (VISINT) gathering assets. As a result, the IAF established a central UAV unit,²⁷ which proved invaluable in the Security Zone.

2.5. Doctrine

Due to doctrinal and organizational difficulties, the IAF declined to assign helicopters to Northern Command. Consequently, the full potential of Israeli air power was not realized against the Hezbollah. In order to rectify this situation, both headquarters began to develop new tactics, techniques and procedures. However, due to the basic disagreements, they chose to focus on specific issues such as special operations rather than on a new comprehensive concept.²⁸

In spite of the limited scope of the original initiative, this cooperation gradually spread to other realms, dramatically improving the accuracy and effectiveness of air strikes against the Hezbollah bases.²⁹ Much attention was devoted to the development of counter rocket-launching capabilities. The methods finally devised (1995) required a significant change in the employment of the IAF. They include making connections between artillery detection radar, ground observation posts, UAVs, helicopters, and fixed-wing aircraft. In contrast to its traditional practice of centralization, the IAF now assigned command and control responsibilities to a forward command position within Northern Command. The IDF put much stock in these methods; yet, operation 'Grapes of Wrath' proved them lacking.³⁰ The increasing cooperation between Northern Command and IAF headquarters benefited from the establishment of Joint Cells within the territorial commands. These cells were responsible for planning and supervising helicopter attacks, transport, and special operations. They also functioned as professional advisers for the territorial commanders.

However, a review of these Cells, conducted by the Unit for Cooperation in August 1995, found them falling short of the mark.³¹ In addition to the increasing cooperation with the ground forces, the IAF focused on the development of capabilities that increasing its adaptability to Low Intensity Conflicts. These included improvement of all-weather and night flight capabilities. Concurrently, the IAF upgraded its intelligence capabilities and increased the number of flight crews in order to enable continuous operations. It developed and practiced new doctrine for these kinds of activities.³²

3. The Second Intifada

3.1. Background

The type of missions conducted by the IAF, as well as the degree of its involvement, changed several times during the Second Intifada (2000 - 2006). Initially, helicopters provided close air support and conducted surgical strikes. The latter were designed to deter the Palestinian Authority (PA) from persisting in the path of violence. In addition the IAF platforms gathered intelligence for the IDF and other intelligence organizations. During operation 'Defensive Shield' (2002) the IAF intensified its offensive operations against terror infrastructure in the Gaza Strip. It also became involved in the controversial 'Targeted Killing' missions. The increasing reliance on the unique capabilities of the IAF led its senior command to conclude that the service must adapt more fully to the demands of the Low intensity Conflict environment.³³

3.2. Fighter-bombers

General Dan Halutz, who commanded the IAF at the beginning of the Intifada, stated that fighter-bombers would not be deployed in the developing conflict. He felt that the danger of errant missions leading to international condemnation far outweighed the operational value of such employment.³⁴ The rare occasions when the IAF did in fact utilize fighter-bombers during the conflict proved the wisdom of this position. Thus, the use of a one ton bomb by an F-16 for the targeted killing of a high ranking Hamas member resulted in 18 civilian deaths and severe international condemnation.³⁵

3.3. Attack and transport helicopters

Helicopters and intelligence gathering assets bore the brunt of IAF activity at the beginning of the Second Intifada.³⁶ Surgical strikes executed by the Helicopters enabled Israel to escalate its response and tailor it to circumstances. Dan Halutz argued that this form of operation had already been practiced successfully in Southern Lebanon.³⁷ The attack helicopters were sent to attack buildings and unarmored vehicles instead of tanks and military formations for which they were designed. Nevertheless, the helicopters adapted successfully to the changing needs of the IDF.³⁸

Changes also occurred within the attack helicopter array. While the Cobra helicopters bore the brunt of operations at the outset of the conflict, the complicated missions were gradually assigned to the Apaches. Enjoying a heavier payload and guided precision strike capabilities, they carried out 1500 sorties, logged 3500 flight hours and fired hundreds of missiles during the first two years of the conflict. These missions were conceived in an ad-hoc fashion rather than through methodological doctrinal development. Indeed, as one Apache Wing commander noted, helicopter employment in the Occupied Territories prior to the Second Intifada was almost unimaginable.³⁹ The intensive operational routine also dictated changes in personnel. Junior pilots were assigned missions normally reserved to experienced flyers and reserve pilots shared an ever increasing share of the combat missions.⁴⁰ This arrangement lightened the burden of the career and conscript pilots; it also allowed junior pilots to learn from the operational experience of older pilots.⁴¹

3.4. UAVs

The UAV array became one of the busiest in the IAF during the first five years of the conflict. Due to increased demands for real-time intelligence in the densely populated urban environment of the Occupied Territories,⁴² the IAF decided to develop its VISINT capabilities in general and the UAV array in particular. Additional platforms and equipment were purchased and its personnel increased.⁴³ Consequently, the array was soon logging thousands rather than hundreds of flight hours over a tri-monthly period.⁴⁴ Their ability to provide pinpoint real-time intelligence facilitated the execution of surgical operations and minimized collateral damage. Since the information gathered contributed significantly to diplomatic and intelligence activities (e.g. footage supporting Israeli claims in the international arena), it was recorded for later analysis.⁴⁵ Deputy

Commander of the first UAV squadron Major Nathan described its unique contribution as: "identifying the short time-frame when the guy qualifies as a target, that's what UAVs are all about... many flight hours and resources have been expended in order to ensure that we hit only the people we mean to".⁴⁶

Though satisfied with the results achieved by the UAVs, and in contrast to some recognized expertise in favor, the IAF was reluctant to assign core missions to unmanned platforms. Halutz stated that: "Contrary to many academics, I don't think UAVs are going to replace manned aircraft in the next 15 years, or even a significant part of the manned force... Saying UAVs are less expensive is an oversimplification".⁴⁷ Despite this cautious attitude, the IAF gained extensive experience devising cooperation techniques for helicopters, fixed wing aircrafts and UAVs. Coordination between the UAVs and ground forces was developed later.⁴⁸

3.5. Doctrine

Soon after the beginning of the Intifada, IAF commander Halutz ordered the development of a new type of ordnance which would minimize collateral damage in the conflict's urban environment.⁴⁹ The developmental efforts of the IAF bore fruit.⁵⁰ This 'lesson learned' reflected the Halutz's opinion that the IAF could offer unique support to IDF operations in the form of stand off precise specific guided weapons.⁵¹ It was during this time that the IAF senior command came to realize that the service should be able to fully participate in non HIC operations. Hence, instead of relying on specific HIC capabilities relevant also to LIC situations, the whole force should develop capabilities relevant to the spectrum of operations.

An important aspect of this change was increased cooperation with Territorial Commands.⁵² This was reflected in Halutz's early guidance, that the IAF prepare for the conflict together with Southern and Central Commands.⁵³ In the spirit of cooperation the IAF was willing to share operational control over some of its assets. Thus, Territorial Commands were given control over IAF assets when warranted by mission parameters. This development was facilitated through the earlier establishment of Joint Cells in Territorial divisions by the IAF's Unit for Cooperation and the Territorial Commands in anticipation of the Second Intifada. The IAF officer assigned to these cells was responsible for air activity within the

division's field of operations and served as professional adviser to the divisional commander. Prior to the Second Intifada, only Northern Command had a permanent IAF liaison officer in order to coordinate air operations in the Security Zone. The new arrangement significantly increased air-land cooperation.⁵⁴ However, despite the new spirit of cooperation, the IAF maintained control over pre-planned strikes.⁵⁵ Eliezer Shkedy, who succeeded IAF commander Dan Halutz, stated in 2005 that: "This is truly a joint battle... and the [IAF] is not truly integrated with the ground forces. We have finally managed to stop thinking emotionally about our differences and to think intellectually. The relationship has been revolutionized".⁵⁶

This budding cooperation came about within the context of a general reorganization. From 2000 through 2003 the IAF underwent a learning process in conjuncture with the IDF effort to revise its operational concepts, doctrine and organization. IAF research teams developed concepts for the employment of airpower as part of the IDF strategy. They believed that the IAF plays a significant role in the pursuit of battlefield decision.⁵⁷ This understanding was formalized in a comprehensive document which later became the IDF operational concept. The new concept emphasized firepower over maneuver and required greater air-land cooperation and flexibility.⁵⁸ They created an Israeli variant of the Effects Based Operations concept. These reforms necessitated cultural change as demonstrated by a joint IAF and Ground Forces Command study which found deep cultural differences between the services. Claims regarding a lack of understanding and cooperation were voiced by officers from both services.⁵⁹ Concurrently, the IAF developed greater interagency cooperation with several intelligence organizations such as the General Security Service (GSS). This cooperation was made possible through the shortening of sortie planning and execution cycles.⁶⁰ Without this interagency cooperation the targeted killing missions might not have been possible.

In order to support the introduction of these reforms, the IAF established the "Air Campaign Planning Department". Its mission was to: "deliver new forms of airpower more relevant to low-intensity conflict (LIC) and effects-based planning and operations".⁶¹ The department was divided into Operations and Doctrine. The operations section was connected to IAF and IDF Operations branches (G-3). The doctrine section was connected to IAF intelligence branch, Military Intelligence, IDF Doctrine and

Instruction branch and Communication and Psychology units. This operations-force structure combination was unique in the history of the IAF. The department enjoyed interdisciplinary experience as it drew personnel from Intelligence, Operations, Operations Research, System Operations, and Systematic Thought. It was responsible for developing doctrines and concepts for air campaigns, analyzing future operational environments and interpreting the IAF strategic objectives assigned by the General Staff.⁶⁴ The department's commanded officer remarked that:

"The air force realized it was prepared for symmetric war... [but] the new business of asymmetric war presents a different set of challenges. We did not build ourselves for LIC. We had to develop everything, almost from scratch. The goal right from the beginning was to be able to hit the target, any target, and only the target... [minimizing] things like collateral damage and the killing of innocent civilians. In the beginning we were not very successful. But if one could graph the progress, he could see that that we have reached a level of interoperability with the ground troops, the aircraft [including] helis and UAVs... [and] that we have almost reached 100 percent of the goal. But it is not over yet, and this will be the goal for many [years] ahead. We have made very significant steps. Today, targets emerge real time, and you have to hit them quick... and create [for yourself] air firepower that is accurate and available... this depends on intelligence data in real time. We are quite close with the technologies here in Israel. If we're there and they know it, they can't move, they can't do anything, and sometimes that's okay with us. We don't want to kill for the sake of killing... if we can get them to give up".⁶²

4. The Second Lebanon War

4.1. Background

During the Second Lebanon War the IAF was charged with two primary tasks. First, and for the first time in Israeli history, it was assigned a theatre of operations - north of the Litani River. However unprepared for the responsibility, IAF commanders resorted to their traditional modus operandi, albeit on a wider scale.⁶³ Additionally, the IAF was charged with destroying long and mid-range rocket launchers; destroying Hezbollah organizational and operational infrastructure; sealing off the ground forces combat zone through the destruction of the lines of transportation and Lebanese national infrastructure (the latter was cancelled due to American

pressure).⁶⁴ Its second primary task was to support Northern Command's ground campaign. This included supervision of the air element of the Command's operations and provision of close air support. The supervision was conducted by the IAF forward headquarters at Northern Command. Though Northern Command was responsible for target selection and prioritization, the IAF enjoyed significant influence over the process.⁶⁵

4.2. Fighter-bombers

Due to the intensity of the violence during the Second Lebanon War, the IAF employed fighter-bomber squadrons. They enjoyed precise strike capabilities which limited collateral damage even in strikes against targets in urban centers. Their inclusion in the fighting force fielded by the IDF was also due to the fact that Hezbollah was relying on firepower capabilities akin to those of a small state. Among these were long range missile launchers capable of reaching the center of Israel. These launchers were located near civilian populations in the Southern Lebanese Shia villages. The IAF had prepared detailed plans and conducted training sorties against mock-up models. Based on highly detailed and reliable intelligence, IAF fighter-bombers destroyed most of these launchers during the night between the 12 – 13 July 2006. ⁶⁶ Less successful was the IAF's attempt to provide close air support utilizing the fighter-bombers, primarily because of the aforementioned shortage of air-land liaison officers.⁶⁷

4.3. Transport and attack helicopters

The attack helicopter pilots had gained vast experience in air-land cooperation during the Second Intifada. However, they found that the Lebanese environment required a different *modus operandi*.⁶⁸ While this cooperation had been regularized by the Territorial Division's Joint Cells in the Occupied Territories, the number of brigades and divisions deployed during the war required reliance on liaison officers. Centralization had been effective for the attritional warfare in the Occupied Territories where the IDF was able to determine the number and size of engagements. The IAF could thus reduce the number of liaison officers, so necessary for maneuver warfare but expensive in terms of manpower. Consequently, the IAF was unable to provide sufficient numbers of liaison officers to the fighting units during the war and deprived them of effective close air support.⁶⁹ The shortage of liaison officers may also affect the ability of the transport helicopters to support the ground forces. The squadrons were

deployed to forward bases near the border immediately after the kidnapping of the soldiers by Hezbollah. As a precautionary measure the IAF called up reserve transport helicopter pilots; this decision later proved invaluable.⁷⁰ During the war, the transport helicopters performed primarily resupply and evacuation missions. The two medium-size transport helicopter squadrons received unit citations for daring evacuation missions.⁷¹ By and large, helicopters were not used as an offensive tool though they did participate in some special operations (such as the highly publicized incursion in Ba'al Beck, deep in the Hezbollah-held territory).⁷² Furthermore, a large-scale conventional helicopter-borne air mobility operation was cancelled prematurely after one of the Helicopters was shot down.⁷³

Even before the war, the IAF recognized the need to increase the level of protection for its helicopters. However, protecting them from low-signature ground-to-air missiles proved a daunting challenge, and one CH-53 was lost during the war.⁷⁴ CEO of the Elisra Group Danni Biran provided some insight concerning the protective systems utilized when he stated the following concerning the company's civilian product: "Protection depends on advance warning. The IR- Technology Missile Warning System that we have developed, and are supplying, incorporates the decades of experience our Group has accumulated as an electronic warfare systems house. This civil aviation project is an extension of our position as the supplier of Missile Warning Systems for Israel Air Force F16 I fighters and combat helicopters".⁷⁵

4.4. UAVs

The UAVs provided the ground forces in Lebanon with much needed real-time intelligence. According to Colonel Tamir Yadaai, wartime commander of the Golani Infantry Brigade, previous experience with the UAVs gained in the Gaza Strip had served them well during the war.⁷⁶ The UAVs also participated in the effort to locate and destroy Hezbollah rocket launchers.

4.5. Doctrine

The Second Lebanon War marked the culmination of some of the long-term processes initiated by the IAF. First, the establishment of the Air Campaign Planning Department provided the IAF with enhanced operational planning capabilities. During the war, the department held

several significant responsibilities. Its staff processed General Staff orders into operational orders for the IAF. They also provided the IDF with estimated consequences of various actions.⁷⁷ In addition, the department maintained the IAF intranet website providing summaries of daily operations.⁷⁸ Thus, in contrast to previous conflicts, the IAF focused not only on successfully completing its missions but also endeavored to contribute its share to the overall campaign plan. This was a result of the developments discussed earlier in the section devoted to the Second Intifada.

During the war the IAF also implemented the first viable solution to the Hezbollah rocket launchers. The IDF developed no less than seven types of launch detecting systems. The IAF developed a communications network capable of transmitting launch-site targeting information to a number of attack squadrons simultaneously.⁶⁶ Indeed, some of the systems that proved successful during the war were not even operational prior to it.⁷⁹ It is noteworthy that senior IAF officers had warned prior to the war that the service possessed no effective means of targeting short range rockets.⁸⁰ This prediction proved correct. The IDF's inability to stem or even limit the firing of short range rockets on Israel was harshly criticized during and following the war. The war also demonstrated the shortfalls of the air-land cooperation mechanism developed in the Second Intifada. Nevertheless, considerable success was enjoyed in several areas. For example, relying on a new doctrine, the IAF supplied forward forces by air.⁸¹

Conclusions

The five long conflicts which took place over the past two decades significantly influenced the very character of the IAF. The service allocated a considerable share of its resources to the prolonged intensive operational activity; it shortened periods of qualification for junior pilots in operational squadrons; it decreased the number of joint training exercises. As a partial solution to these changes, the IAF began to combine training flight-time and operational sorties. In terms of personnel, the IAF underwent three developments. First, there was a significant increase in UAV personnel and changes were introduced to its operator training. Previously reserved for failed flight cadets, the IAF now accepts male and female trainees with no flight background to the "School for UAVs". Second, the IAF increased its reliance on reserve pilots in order to lighten the burden. Third, the

operational environment of the Second Intifada defined the operational reality for a generation of pilots. The sudden outbreak of the 2006 War forced a rapid adaptation to a very different operational reality. It demonstrated the need to increase the familiarity with a larger range of terrains and scenarios. In terms of status, attack helicopters have become more dominant within the IAF. Their surgical strike capabilities ensured them a central role both in Lebanon and in the Occupied Territories, while the fixed-wing squadrons were less relevant for LIC missions. Senior IAF and IDF commanders understood that employing fighter-bombers would most likely result in international condemnation. Similarly, operational success afforded the UAVs unprecedented prestige and resources. The result was a kind of 'division of labor' in which the attack helicopter squadrons are responsible for the operational routine in LICs while the fixed wing squadrons train for HICs and special missions against long distance targets (e.g., the attack on the Iraqi Nuclear Installation in 1981).

In conclusion, the IAF was generally successful in adapting to the LIC conflicts fought from 1982 through 2006. However, this adaptation may have limited its capability to operate in other kinds of conflicts. The fighter-bomber's difficulty to provide close air support, brings to question their ability to do so in the future against regular forces. One main reason is that the IAF failed to fully realize the long-term effects of the adaptations and has been neglecting capabilities which may be missed in HIC. In order to counter these tendencies it should perhaps invest more in war gaming, military education programs and research centers such as those employed by the US Army Training and Doctrine Command. Finally, despite improved air-land cooperation, the IDF services still operate and develop their force structure independently. Without greater integration and coordination in the areas of education, procurement, research and development, and operational planning the IDF and IAF will continue to fall short of realizing the full potential of the Israeli air power.

Tamir Libel is a PhD candidate in the Department of Political Studies at the Begin Sadat Center for Strategic Studies at Bar Ilan University, Israel.

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² The First Intifada was essentially a civil resistance campaign; the IDF was confined to policing activities and the IAF's participation was consequently minimal. Therefore it will not be analyzed in the current article.

³ "Low intensity conflict is a political-military confrontation between contending states or groups below conventional war and above the routine, peaceful competition among states. It frequently involves protracted struggles of competing principles and ideologies. Low intensity conflict ranges from subversion to the use of armed force. It is waged by a combination of means, employing political, economic, informational, and military instruments. Low intensity conflicts are often localized, generally in the Third World, but contain regional and global security implications ", United States Department of Defense, *Field Manual 100-20/ Air Force Publication 3-20. Military Operations in Low Intensity Conflict*, 12 May 1990. Available at: <http://www.globalsecurity.org/military/library/policy/army/fm/100-20/index.html>. Access date: 16.9.2008.

⁴ Eliot A. Cohen, Michael J. Eisenstadt and Andrew J. Bacevich, *Knives, Tanks and Missiles: Israel's Security Revolution*, (Washington, D.C: The Washington Institute for Near East Policy, 2008) p. 20.

⁵ Ibid, pp. 21- 23.

⁶ The Israeli Security doctrine was never officially formalized but is rather a collection of assumptions, guidelines and predictions which direct the decision making process of political and military leaders since the 1950s. One such assumption has been that battlefield decision would require employing the various elements of the IDF as a joint force. For a comprehensive discussion of Israeli Security Doctrine see: Israel Tal, *National Security: The Israeli Experience*, (Westport, Conn: Praeger, 2000).

⁷ Eliot A. Cohen, Michael J. Eisenstadt and Andrew J. Bacevich, op. cit, pp. 23-24.

⁸ For a comprehensive analysis of the historical development of IAF force structure and doctrine see: David Roodman, *Defense and Diplomacy in Israel's National Security Experience*, (Brighton, UK: Sussex Academic Press, 2005) 40- 54.

⁹ The IAF's original missions included: securing Israeli airspace, gaining air superiority, supporting land operations, strategic bombing, transporting forces and material and collecting activities. Eyal Ahikar (Los), *The Air Force's role, missions and strategic bombings*, available at: http://www.fisherinstitute.org.il/_Articles/Article.asp?ArticleID=122&CategoryID=22&Page=1. [Heb].

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²⁸ Tamir, op. cit, p. 125.

²⁹ Ibid, ibid.

³⁰ Ibid, pp. 131- 132.

³¹ Israel State Comptroller (1997). "Transport Helicopter: Air and Ground Cooperation", *Annual Report 47*, Jerusalem: Governmental Printing, p. 1007. [Heb]

³² Lior Shlein and Dror Gloverman, op. cit. These developments brought several Israeli military and airpower thinkers to call for a greater reliance on the IAF and even for a restructuring of the IDF in order to make the IAF into the leading service. Their influences will be discussed in the following pages. For a comprehensive study by the one of leading airpower thinker , which was written during the last years of the Security Zone see: Shmuel Gordon, *The Vulture and the Snake: Counter- Guerilla Air Warfare- the War in Southern Lebanon*, (Ramat- Gan: Begin- Sadat Center for Strategic Studies, Bar Ilan University, 1998).

³³ For a general review of Israeli military policy during the Second Intifada see: Yoram Peri, *Generals in the Cabinet Room*, (Washington: United States Institute of Peace Press, 2006).

³⁴ Lior Shlein and Noam Ofir, "IAF Commander Dan Halutz: Employing the Air Force is a difficult dilemma", *IAF Journal*, 136, 12/ 2000. [Heb]

³⁵ Amos Harel and Avi Isacharoff, *The Seventh War* (Israel: Miskal, 196- 197. [Heb]

³⁶ Noam Ofir and Lior Shlein, "Air Force Commander Dan Halutz: If the situation in the territories escalates, the air force will operate differently", *IAF Journal*, 135, 2000. [Heb].

³⁷ Ibid.

³⁸ Anat Washler, "We hoped for combat missions", *IAF Journal*, 138, 2001. [Heb].

³⁹ Ran Rosenberg and Roni Winkler, "Attack Helicopters should be used whenever feasible", *IAF Journal*, 146, 2002. [Heb].

⁴⁰ Ibid.

- ⁴¹ Liad Bareket, "The missiles were targeted against the windows from which the Soldiers were hurled out", *LAF Journal*, 135, 2000. [Heb].
- ⁴² David A. Fulghum and Robert Wall, "Israel's future includes armed, long- range UAVs", *Aviation Week and Space Technology*, 156, 25, 24.6.2002, p. 83.
- ⁴³ Yakir Elkariv and Lior Shlian, "IAF Commander Major General Danni Halutz: the IAF VISINT sector has grown significantly since the beginning of the conflict with the Palestinians", *LAF Journal*, 145, 2002. [Heb].
- ⁴⁴ Sivan Gazit, "Big Brother Sees All", *LAF Journal*, 170, 2006. [Heb]
- ⁴⁵ Fulgham and Wall. See also: Moria Diamont, "A Broader Perspective", *LAF Journal*, 180, April 2008. For a comprehensive discussion of the quality of real-time intelligence analysis see: Chen, "Real Time Intelligence Analysis from Unmanned Aerial Vehicles", *Maarachot*, 395, 2004, pp. 44- 46.
- ⁴⁶ David A. Fulghum and Robert Wall. "UAVs Validated In West Bank Flight", *Aviation Week and Space Technology*, 156, 19, 2002, 13.5.2002, p. 26.
- ⁴⁷ Ibid, ibid.
- ⁴⁸ Ibid, ibid.
- ⁴⁹ Lior Shlein and Noam Ofir, op. cit. [Heb]
- ⁵⁰ Eliezer Shkedi, "The IAF Campaign in the Intifada", in: Oded Marom (ed.), *Air Power Counter Terrorism*, (Herzeli: The Fisher Institute for Air and Space Strategic Studies, 2005) pp. 31- 32.
- ⁵¹ Lior Shlein and Noam Ofir, op. cit.
- ⁵² Shkedi, op. cit, 33- 34.
- ⁵³ Noam Ofir and Lior Shlein, op. cit.
- ⁵⁴ Anat Weshler, "Battalion Commander: This is Six", *LAF Journal*, 136, 12/2000. [Heb]
- ⁵⁵ Noam Ofir and Lior Shlein, op. cit.
- ⁵⁶ B. C. Kessner, "Terrorism Fight Drawing Air and Ground Forces Closer Together", *Defense Daily International*, 6, 22, 2005 (3 June 2005).
- ⁵⁷ Dan Halutz, "The Conflict from the Aerial Dimension", in: Anonymous (ed.). *Defense Strategies in Light of the the Israeli- Palestinian Conflict Seminar* (Herzeli: The Fisher Institute For Air and Space Strategic Studies, 2003) pp. 18-19. Available at:

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⁵⁸ Ibid, pp. 19- 20.

⁵⁹ Ande Mesler, "New study identifies deep fissures between the IAF and the ground forces", *LAF Journal*, 132, 5, 2000. [Heb]

⁶⁰ Shkedi, op. cit, pp. 31- 32.

⁶¹ B. C. Kessner, "New Department Transforming IAF for LIC Success", *Defense Daily International* (11 March 2005).

⁶² Ibid

⁶³ Gabriel Siboni, "The Military Campaign In Lebanon", in Meir Elran and Shlomo Brom (eds.), *The Second Lebanon War: Strategic Dimensions*, (Tel- Aviv: Miskal, 2007) 61- 62. [Heb]

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⁶⁵ Ibid, p. 62.

⁶⁶ Amir Rapaport, *Friendly Fire*, (Tel- Aviv: Maariv, 2007, pp. 113- 116. [Heb]

⁶⁷ This argument was presented by a wartime infantry commander: "Golani Commaner, Col. Tamir Yadaai: Part of operational planning should be conducted jointly", *LAF Journal*, 171, 2006. [Heb]

⁶⁸ Sivan Gazit and Elazar Ben Lolo, "In the aftermath of the war: A significant increasing of joint air-land training", *LAF Journal*, 173, 2, 2007. [Heb]

⁶⁹ Siboni, op. cit p. 62. See also the testimony of Col. Yaddai, Yael Bar and Lior Estlain, op. cit [Heb]

⁷⁰ Sivan Gazit and Nina Mindrol, "The Rescuers", *LAF Journal*, 170, 2006. [Heb]

⁷¹ For example see the reasons for the citation for bravery to Black Hawk helicopter 'Desert Birds' squadron available at: <http://www.gvura.org/?l=he&a=5064>. Accessed: 27.5.2008. [Heb]

⁷² See for example Rappaport, pp. 217- 225.

⁷³ Ibid, pp. 303- 304, 323- 325. According to Amir Rappaort, CH- 53s continuously supported special operations missions and also this large-scale air mobility operation. Ibid, p. 340.

⁷⁴ Amir Eshel, "The Israeli Air Force and the Asymmetric Conflict", in Oded Marom (ed.), *Airpower and the Asymmetric Conflict*, (Herzeliya: the Fisher Institute for Air and Space Strategic Studies, 2007), p. 41. [Heb]

⁷⁵ Anonymous, "Elisra Group Selected to Provide Protection Systems for Passenger Aircraft", *PR Newswire US* (12 October 2004).

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⁷⁸ Ibid.

⁷⁹ Yael Baar and Lior Estlain, "Lieutenant General Amir Eshel: the 'sensors to shooters' capabilities we used to hunt launchers were singular in the history of military aviation", *LAF Journal*, 171, 10/2006. [Heb].

⁸⁰ Eshel, op. cit, pp. 43- 44.

⁸¹ Yael Baar and Lior Estlain, op. cit.