The Sixth Arab-Israeli Conflict: Military Lessons for American Defense Planning

by Anthony H. Cordesman

IT IS ALWAYS DANGEROUS to draw large lessons from little wars. Israel's invasion of Lebanon has so far been a limited conflict fought under unique circumstances. The Israelis have had seven years to develop plans and tactics tailored to a given threat. It has also been a uniquely unequal struggle.

Israel launched its invasion against PLO forces who were desperately trying to avoid such a conflict. Israel's ground troops won their initial victories against less than 8,000 PLO guerrillas whose armament—while poor in quality—was far better than their training, tactics, and leadership. To put this in perspective, the battle for Beaufort Castle involved some of the most bitter initial fighting in the invasion. Its PLO defenders, however, numbered only about 200 men, and only 30–40 proved to be in the castle when it was captured.

The Syrian army has only fought seriously when it felt that Israel threatened its ability to defend Damascus. Even then, Syrian armor retreated up the Bekaa the moment it began to take significant casualties, and Israel experienced more problems from the terrain than in dealing with the Syrian army. The fighting between Israel and Syria for control of the Damascus road was relatively *pro forma* and more a Syrian test of the seriousness of Israel's intention to capture the road than a battle. All rhetoric aside, the Arabs have known all too well that they face an enemy that can defeat them virtually at will, and that they have no military option to help the Palestinians.

Even the invasion's major air battles must be kept in careful perspective. The present duel between Israeli fighters and Syrian fighters has gone on since 1973, and Israel and Syria have employed roughly the same weapons and technology for the last two years. The duel between Israeli fighters and Arab land-based air defenses has gone on even longer. The Israelis won the first round in this duel during the Suez Canal war of the early 1970s. They nearly lost the next round during the October war in 1973, but only because their contempt for their Arab opponents had made their training lax, and they failed to properly employ the countermeasures the US had previously provided.

The air war is also being fought largely under fair weather and daytime conditions of a kind with little relevance to a war in Europe, and over a small and comparatively unique terrain. The total area of Israel is only 20,720 sq. kms. The recent air battles have been fought over an area of less than 10,000 sq. kms. and most have been concentrated over an area the size of Luxembourg. These conditions are not similar to what the US is likely to face in the future.

The Three Major Lessons of the War

Such wars do not "prove" anything about US or Western military needs in NATO, in the Persian Gulf, or in Asia. Like the Falklands conflict, they can provide only limited lessons, and most of these lessons have nothing to do with the debate over whether the West needs less or more sophisticated technology, or the "reformist" debate over attrition vs. maneuver. The three most important lessons are, in fact, so old that the only thing striking about them is the incredible inability of some armies to learn them:

First, the war has shown the importance of readiness and training. The Israeli forces that invaded Lebanon were not waiting for some mythical "get well" period during which Israel finally funded the required spare parts, munitions, equipment, and training. Since 1973, they had been given the most realistic training of any forces in the world and they had been kept ready to fight at any moment.

Ironically, many of the Israeli reserve units used in the invasion had more realistic and more advanced training than the best active US divisions in West Germany. It is also striking that Israel has flown well over 1,200 high stress combat sorties with advanced jet fighters and has evidently not lost more than one or two aircraft to poor maintenance, pilot error, or poor armament and turnaround support. Given the average readiness of USAF units in Europe, the US would probably lose 10 times as many aircraft per sortie flown because of readiness problems—even if the Warsaw Pact failed to shoot back.

Second, the war has shown the importance of leadership, innovation, and flexibility. Admittedly, the Israelis have a unique advantage. They had seven years to learn how to attack a hopelessly inferior enemy, and eight months to refine their attack and contingency planning down to the level of analyzing how to attack every bridge in Lebanon. The US will never be able to afford such single-minded concentration.

Yet, Israel's performance has still been far more impressive than in 1973 or 1978. Israel made brilliant use of helicopter forces, independent armored units, small amphibious landings, special forces and commandos, and paratroops in combination with its repair combat arms. It has shown great flexibility not only in executing its initial attack, but in dealing with the unexpected problems and opportunities that have arisen since.

It is true that the Israelis made far better use of combined arms than in 1973 or 1978, but this was only part of the story. The Israelis have again proven that their officers and NCOs have the training and the freedom to innovate on the spot at the squad to battalion level, and that this allows them to dominate their more rigid enemies. They have shown that their more senior officers have recovered the ability to create the broader tactical and strategic opportunities to make that innovation effective. The Israelis had truly professional leadership, and it gave them far more of an edge than their weapons or technology.

Third, the war has shown the value of superior organization. This superiority had badly declined in 1973. Israel's reservists then were poorly organized; its mobilization plan was carelessly structured; its logistic system was badly managed; its combined arms organization was weak; and its intelligence and higher command organization was capable only of attacking an enemy, not of responding to an invasion or unexpected enemy countermove. The Israeli air force had no dedicated command unit for planning and controlling air attack missions and had to improvise one on the spot. Its air reconnaissance efforts did not keep pace with Arab maneuver and resupply activities, and Israel had no command function dedicated to helping its pilots counter Arab ground-based air defenses.

Since then the Israelis have worked to correct these weaknesses, and they have tested every "fix." In the process, they have made technology the servant of military organization and not its master. Where technology can help to meet a military need, Israel obtains technology tailored to that purpose. Israel has a unique advantage in this regard because it can fight predictable enemies who have limited tactical options in a fixed terrain. Nevertheless, Israel's integration of technology into its forces is uniquely efficient,

and may argue for an equally dedicated technology effort directly in support of each of our unified and specified commands.

In short, these three lessons show that modern armed forces can achieve great advantages from a rigorous, if not ruthless, attention to military fundamentals. They show that the present invasion is not an argument for some particular technology, tactic, or innovation, but rather a case for choosing a given approach to war, for funding it to the point where it can work, and for then tempering it through exercises and training until it becomes fully effective.

Technology, Tactics, and Trivia

At the same time, there are some lessons that can be drawn about technology and tactics, and some important cautionary remarks that need to be made about the invasion's implications for US force planning.

Armor

While it is mildly interesting to confirm that the T-72 is vulnerable to the US 105mm tank gun, that the T-72 has not solved the problems past Soviet tanks have had with inadequate range finders and gun sights, that Israeli improvements to US 105mm APDS rounds are effective, and that the T-72's gun has problems with the advanced armor on the Merkava, these developments provide no surprises. NATO has known the details of Soviet and export versions of the T-72 for at least three years.

The T-72 is "new" only in the sense it is now being employed in battle where the West can see the results. The Soviets have already deployed a new tank—the T-80—with far more advanced armor, fire control, and human engineering. Soviet tanks seem certain to be further upgraded in terms of armor, fire control, and firepower by the mid-1980s, and will then pose a serious challenge even to the M-1 or Leopard II. The USSR is already deploying better artillery, AFVs, army anti-air weapons, and anti-tank weapons than those yet furnished to Syria.

The only real news that could emerge from the current fighting would be the discovery that Israel has developed self-homing minelets that can be launched by artillery shells or cluster bombs. This could prove the value of a new form of anti-armor area munition which virtually every NATO country now has under development. At this point, however, the reports of such a "secret weapon" could just as easily be reports of the use of conventional US cluster bombs—which seem to have had the same lethality and reliability problems they had in Vietnam.

The US and its allies cannot afford to assume that Israel's invasion of Lebanon indicates that Western arms have overall superiority to Soviet weapons. First, a substantial percentage of NATO's main battle tanks are inferior to both the Soviet and Western tanks involved in the current conflict. Second, the Soviet weapons now furnished to Syria are nothing like the mix of weapons that will exist in Soviet forces by the mid-1980s.

Helicopters and Special Forces

As was the case in the Iran-Iraq War, and to a lesser extent in the Falklands, the helicopter has again emerged as able to bypass defensive strong points and to survive encounters with armor. The present war argues that attack helicopters, heliborne troops, and special forces can enable armor to rapidly overcome barrier and other defenses, particularly if artillery and airpower are properly used to isolate the defender and suppress anti-tank weapons.

While it is dangerous to generalize, the war is another data point which argues that modern armies can maneuver effectively in spite of improvements in the defense, and that light forces equipped with "force multipliers" like anti-tank guided missiles do not give the defender new advantages. It also argues that the Soviet advantage in procuring large numbers of advanced attack helicopters like the Mi-24 Hind D and E is an important one, and that there are major risks in the decade-long delay in procuring truly advanced US attack and scout helicopters.

The Air War

There is no doubt that Israel has made brilliant use of the Aim-9L multi-aspect, air-to-air missile; the superior maneuver capabilities of its US supplied F-15s and F-16s; and the radars on its F-15s and E-2Cs. Israel's innovation in using the radar on its four E-2Cs to track Syrian fighters from the moment of takeoff—and in using an F-15 in the rear to act as a mini-AWACS and battle manager for the F-15s and F-16s that engage Syrian fighters—is a brilliant innovation. It solves Israel's critical problem of dealing with mass fighter attacks. It has deprived the Arabs of the ability to "overload" Israeli combat formations with so many enemy fighters that they break up the formation and create firing opportunities: the one Arab tactic Israeli commanders feared after the October War.

The war has also validated the need for advanced "look down/shoot down" radars on modern fighters; the need for high performance multi-aspect, air-to-air missiles; and the value of an AWACS. It confirms the results of nearly 10 years of US exercises which have reached the same conclusions.

But, it must be stressed that the Syrians—who showed far more courage and aggressiveness than in 1973—were flying stripped-down export versions of the MiG-21 and MiG-23, and at best had Soviet AA-8 air-to-air missiles. They lacked top-ranking Soviet fighters and air-to-air missiles. The Syrians also flew against an Israeli enemy with absolute superiority in air sensors and into a small "killing zone" where Israel had the initiative in choosing its [redacted] Syrian missiles and other land targets.

This war is not an indication of NATO superiority over the Warsaw Pact, or of future trends. The Soviet Union's new AA-9, and follow-on types, will bring it far closer to parity in air-to-air missiles. Its Candid 2 AWACS should be deployed by the mid-1980s. The advanced models of its MiG-21s and 23s deployed with Pact forces already have far better avionics than the export versions in Syrian inventory. New variants of the MiG-25 have look-down/shoot down radars and the AA-9 missile. The SU-25 (an A-10-like attack aircraft) is already operational in Afghanistan.

The Soviet SU-27 will be operational by the mid-1980s with radar and missile capabilities roughly equivalent to those of the F-15. The new MiG-29, which will become operational in 1985, will roughly equal the newest US fighter, the F-18, in avionics, armament, speed, and turning rate. Its radar will have a 60 nautical mile (nm) search range, and 45 nm track range, which could cover most of Israel.

In short, the West has no massive technical superiority that can give it the 80:1 kill ratios Israel has achieved over Syria. Israel's advantage comes from superior tactics and training, and from the ruthless and consistent Soviet denial of the advanced military technology the Arabs need to compete. This denial has made the Soviets indirectly responsible for killing as many Syrian pilots as Israel.

Air Defenses

Equal caution must be shown about the reports of Israeli kills of Syrian SA-6 sites. First, the Israelis have exaggerated their damage claims. Second, they have conducted a deliberate disinformation campaign about their tactics, and obfuscated the existence of still-secret, Israeli-designed electronic warfare equipment. Third, and most important, the Israelis have long been able to break the synthesizers which change frequencies on the SA-6's continuous wave radar. Finally, the Israelis were able to precisely target known SA-6 sites in a limited geographic area where the SA-6 lacked overlapping coverage from modern longer range, surface-to-air missiles and short range air defense weapons.

This does not mean that Israel's performance does not command great respect. Israel destroyed most of the [redacted] in Lebanon and in Syria near the Lebanese border in its initial attack, and also shot down 29 Syrian MiGs without single loss. This performance unquestionably surprised the USSR, which sent the deputy commander of Soviet air defense, Col. Gen. Yevgeny S. Yurasov, to Syria the day after the attack. It is also clear from the success of Israeli attacks during the first week of July on the new SA-6 units that Syria deployed that the

USSR either did not have, or would not provide, a "fix" to the vulnerability of the electron[redacted]warfare equipment available to Syria.

Neve[redacted]ess, Israel's basic tactics are familiar from Vietnam. It seems to have used modified Ryan Firebee drones to obtain the data it needed to program the electronic countermeasure pods on its fighters to jam the semi-active radar homing on the missiles, and to reduce the effectiveness of their guidance radars. At the same time, Israel used its standard recce capabilities and E-2Cs to characterize the emissions of Syria's missiles and radars and to pinpoint the missile sites. On the day of the attack it sent in a force that eventually amounted to some 90 aircraft, and flew a mix of attack sorties with some fighters equipped with Shrike anti-radiation missiles (ARM) and some equipped with a mix of Maverick, laser-guided bombs, and regular bombs and rockets.

Israeli-modified Shrikes were used against any Syrian radars that became active, while the regular ordnance was used to destroy the SA-6 sites. F-16s seem to have performed the major attack missions, which required critical timing and high accuracy due to two known problems: that the SA-6 can also be fired optically, and the presence of AA guns and SA-7s in the area. The F-15s provided forward radar warning and air defense cover, and the E-2C, advanced electronic warfare analysis.

In short, Israel built on tactics the US first introduced in the late 1960s to attack a type of missile that Israel first captured and examined in October 1973. Israel was also able to use its drones and electronic warfare capability against a missile whose operation leaves a massive electronic "fingerprint" every time it is switched on.

These advantages do not apply to NATO now, and will not apply to Israel in the future. The SA-8 surface-to-air missiles now deployed in Warsaw Pact forces, and soon to be deployed to Jordan, use a monopulse radar that is far harder to jam, and the SA-8's missile, radar, and antennas are mounted on BDRM-2 vehicles which give them far greater mobility. The SA-8 can be deployed in greater numbers of fire units than the SA-6, and uses data links to remote radars so that it only has to be switched on briefly when it fires.

Another new Soviet surface-to-air missile, the SA-10, provides advanced coverage below 300 ft. and can even shoot down cruise missiles. The new SA-13 short range missile system combines a range-only radar with four missiles using advance infrared homing. It can kill enemy fighters at 2 nm ranges and 30 ft. altitudes with negligible warning and targetability. Man-portable versions of this missile may soon be in service and end Israel's current ability to use the simple countermeasures like flares and balloons to counter less sophisticated systems like the PLO's SA-7s.

The US is developing countermeasures to cope with these developments. It has new individual airborne jammers, the AN/ALQ-165, going into production to replace its obsolescent ALQ-100/126s. These jammers can be fitted to virtually any US or allied aircraft and can, up to a limited degree, adapt to changes in the threat. The US is updating the special Wild Weasel F-4G fighters configured to kill surface-to-air missile sites, and it has new or improved air-to-surface missiles to kill enemy surface-to-air missiles and radars. These missiles include the AGM-88A high-speed anti-radiation missile (HARM); the improved Maverick, which can home on the heat of power generators once radars are shut down; improved Shrike anti-radiation missiles; and a possible variant of the AIM-9C for "point-and-shoot" attacks.

It is far too soon, however, to judge the outcome of this contest in advanced technology, especially since the Soviets have similar weapons of their own. The Soviet AS-10 anti-radiation missile is already deployed in Europe in large numbers, and its more advanced fighters have racks for a more advanced missile—the AS-14—which can home on NATO's Hawk and other radar-guided, surface-to-air missile sites at ranges up to 150 nm.

There are many other passing lessons that have emerged from the fighting. The invasion has again shown the importance of cities and built-up areas as critical defensive strong points and the need to train and equip for urban warfare. It has shown the acute problems inherent in relying on technical intelligence instead of HUMINT. For example, the Israelis estimated that the PLO had only 80 tanks before the invasion but now claim to have found nearly 500, and they have been amazed by the overall levels of arms cached in unknown sites, which they claim are more than 10 times the size of their prewar estimates. Israeli night attacks have again shown the advantage that night warfare can provide against even an alert enemy. These, however, are lessons largely for professional military planners.

The Implications for American Defense Planning

Like the Iran-Iraq War, and the Falklands conflict, the military side of the Israeli invasion is most important in indicating the value of military professionalism. If we take this lesson to heart, we will have learned most of what is necessary.

We should also, of course, do our best to learn from other aspects of the invasion. We have the same national interest in examining its key details that the Soviet Union showed in rushing its deputy air defense commander, Gen. Yurasov, to Syria to learn from the Israeli strike on Syria's SA-6s. Yet like other recent "little [redacted]isleading indication of the rate of change that is taking place in the military war profession's tools. We already face far more serious threats, and our military future will be far more demanding. ■☆■

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MEMOS

OVERHAUL OF FAST FRIGATE USS *ROBERT E. PEARY*, awarded to Todd Shipyards, will begin in September. Work on the 438-ft. 3,877-ton ship will consist of repairs and alterations of the 1200 PSI propulsion plant; auxiliary support, fire-control, and weapons systems; and habitability items. The 320 officers and enlisted men of the *Peary* will be housed at Todd's Seattle shipyard during overhaul. Fixed price contract is $20-million for the regular baseline overhaul.

CH-53E PRODUCTION CONTRACT has been awarded to United Technologies Sikorsky Aircraft division totalling $87.1-million for 12 Super Stallion helicopters. This addition to a previous $43-million award for long-lead advance material procurement brings total contract value to $130-million. Under firm contract to produce 61 CH-53Es for the Navy and Marines—plus support and training, totalling $797-million—Sikorsky has to date delivered 27 Super Stallions. The CH-53E can accommodate 55 fully equipped troops, palletized cargo and wheeled vehicles, or can lift 16 tons of external payload over a 50 nautical mile radius.

PREMIER KC-135R ROLLOUT occurred recently at Boeing's facility in Wichita. The KC-135R's new engine—the CFM56-2B-1—was developed by CFM International, jointly owned by General Electric and France's SNECMA. It is a dual-rotor, variable stator, high-bypass ratio turbofan engine. At 22,000-lbs. thrust, the CFM56 provides a 60% increase in power over the J-57 engine it replaces, while consuming 25% less fuel. This represents a five-year savings of over $715-million in fuel costs for a fleet of KC-135 tankers. Other aircraft improvements include: a new generator, an auxiliary power unit, strengthened main landing gear, improved nose wheel steering, anti-skid brakes, a larger horizontal stabilizer, and related modifications to the cockpit controls. The engineering development and integration program of the KC-135R was a shared US-French effort. Current USAF plans are to re-engine over 300 KC-135 aircraft through 1984 to 1988 at a cost of over $6-billion. ■☆■