The Lessons of the Israeli-Lebanon War

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Caveats

- **Data and Reporting often uncertain.**

- **Deep internal political debates in Israel. Charge and countercharge not resolved by Winograd Commission.**

  - **Everyone one seeks to advance their own cause, service, branch, program, and "thing."**

- **Hezbollah controls information on its operations, all data is seen as political weapon.**

- **Outcome in terms of politics and deterrence dictated by Lebanese politics, and tensions between Israel, Syria, Iran, and Arab states.**

Summary of Action

- Israel fought an "optional war" in which it chose to unilaterally escalate from a minor Hezbollah attack on July 12, that abducted two IDF soldiers during a patrol in the northern border area near Lebanon.

- "One day" air war drifted into a major 33-day campaign.

- Eventually led the IAF to fly some 15,500 sorties and attack roughly 7,000 targets.

- IDF fired some 100,000 tank and artillery rounds, and committed at least 15,000 troops to attacks in Lebanon out of a force that rose to roughly 30,000.

- While such counts are uncertain, it received some 3,970 Hezbollah rockets in return. More than 100 a day; nearly 250 on last day.

- The casualty data are somewhat uncertain, but Israel lost 117-119 soldiers and 41 civilians. This compare with 900 troops killed in 18 year of occupation in Lebanon.

- The Hezbollah lost 70 to 600 fighters. Various estimates claim some 900 to 1,110 Lebanese civilian deaths, loss of 15,000 housing units, $10 billion in economic and infrastructure costs.

Grand Strategy

Failing Before the War Began:
Grand Strategic Weaknesses

- **Failure to calculate the cost-benefits of escalation at all times before and during conflict.**

- **Failure to accurate characterize the opponent.**

- **Failure to understand the nature of the Lebanese state and reaction of outside states.**

- **Inability or failure to describe a credible grand strategic outcome in advance of going to war.**

- **Unrealistic estimate of own tactical capabilities in terms of airpower.**

- **Lack of planning and definition of ground campaign.**

- **No plan for "stability operations."**

- **Decoupling of diplomatic actions, warfighting, and focus on conflict termination.**

Failing Before the War Began:
Major Israeli Strategic Goals

- **Destroy the "Iranian Western Command" before Iran could go nuclear.**

- **Restore the credibility of Israeli deterrence after the unilateral withdrawals from Lebanon in 2000 and Gaza in 2005, and countering the image that Israel was weak and forced to leave.**

- **Force Lebanon to become and act as an accountable state, and end the status of Hezbollah as a state within a state.**

- **Damage or cripple Hezbollah, with the understanding that it could not be destroyed as a military force and would continue to be a major political actor in Lebanon.**

  - **"We will not go part way and be held hostage again. We'll have to go for the kill – Hezbollah neutralization." (Ambassador Daniel Ayalon)**

- **Bring the two soldiers the Hezbollah had captured back alive without major trades in prisoners held by Israel—not the thousands demanded by Nasrallah and the Hezbollah.**

When You Don't Need Grand Strategy; Only to Endure
Hezbollah Strategic Goals

- **Survive, adapt to Israeli-driven escalation.**

- **Inflict maximum casualties in forward area, win in limited battle of attrition.**

- **Demonstrate ability to strike into Israel with short and long-range weapons.**

- **Dominate media battle, war of perception, struggle for international political support.**

- **Enhance postwar status in Lebanon and Islamic World.**

- **Emerge with political leadership, most weapons, key cadres intact.**

- **Prevent ceasefire, Lebanese Army, international force from disarming and containing.**

Nasrallah on War

- "This Israel, which possesses nuclear weapons and the most powerful air force in the region, by God, it is weaker than a spider web.."

- "The Israeli Air Force could destroy the Lebanese Army within hours, or within days, but it cannot do this with us…We don't have a classical presence. We exercise guerilla warfare…Lebanon still needs the formula of popular resistance."

- "You wanted an open war. Let it be an open war. Your government wanted to change the rules of the game. Let the rules of the game change."

- "You don't know who you are fighting today. You are fighting the children of the Prophet Mohammed. You are fighting people who have faith."

- The surprises I promised will begin from now…We are not a regular army. We will not fight like a regular army."

- "I don't want to raise expectations. I never said the Israelis cannot reach any place in Southern Lebanon. Our dogma and strategy is that when the Israelis come, they must pay a high price. This is what we promise and this is what we will achieve, God willing."

Robin Wright, <u>Dreams and Shadows</u>, Penguin, 2008

Hezbollah's Limited "Victory:" Immediate Post War Actions

- We did not think, even one percent, that the capture would lead to a war at this time and of this magnitude. You ask me, if I had known on July 12…that the operation would lead to such a war, would I do it? I say no, absolutely not."

- "Today is the day to keep up our promises. All our brothers will be in your service starting tomorrow…Completing the victory can come with reconstruction."

- Accepts government's seven point plan, including dismantling militia.

- Agree to let army deploy through its southern strongholds.

- Accepts UN resolution and deployment of 15,000 UN troops.

- Holds back Hezbollah fighters from attacking IDF troops remaining in Lebanon.

- Shuts down 14 positions around Shebaa farms, closes checkpoints, seal tunnel and bunkers, remove weapons.

- *But, turns inward in political struggle, deploys in depth, more than rebuilds strength in fighters, rearms with Iranian and Syrian support ("40,000 missiles and rockets")*

Robin Wright, <u>Dreams and Shadows</u>, Penguin, 2008

Strategic Outcome: No One Wins or Loses

- **Impact on Israeli level of deterrence is ambiguous.**

- **Israeli military weaknesses exposed, but Israel seeks to correct.**

- **Hezbollah gains some credit, but internal and external impact is mixed.**

- **Hezbollah turns inward, establishes more depth, and rearms: "40,000" rockets and missiles," but does not restore position in south.**

- **Lebanon is not a "normal state," Lebanese Army does not establish security and even weaker and more divided.**

- **UN does not establish security.**

- **Syria and Iran remain in prewar role.**

- **Peripheral conflicts and tensions remain acute.**

Key Strategic Lessons

- **Grand strategic decisions regarding character of enemy, operating environment, capabilities, andconflict termination are critical.**
    - *Pursue a Decisive Strategy within the Planned Limits of the War*
    - *Prepare for Conflict Escalation, Alternative Outcomes, and "Plan B"*
    - *Prepare for Conflict Termination*
- **Don't Fight Enemy on Its Own Terms**
- **Acountability and Responsibility**
- **Fighting in Civilian Areas and the Problem of Collateral Damage**
- **Civilians as the First Line of Defense**
- *Unavoidable Limits of Intelligence, Targeting, and Battle Damage Assessment*
- *Rethinking Force Transformation*
- **Rethink Deterrence, Intimidation, and the Political, Perceptual, Ideological, and Media Dimension of War**
- **Examine and Define "Proportionality"**

Lessons that Are Shared with Other Wars

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Common Lessons with Iraq and Vietnam - I

- **Political wars must be won on political basis: Limited wars are wars of perceptions, ideology and "weapons of mass media."**

- **A successful asymmetric opponent seeks to fight a major conventional power above and below its level of conventional competence and superiority.**

- **Vastly cheaper to use infantry and irregular forces than conventional forces, progressively easier to given such forces more advanced weapons.**

- **Population can be the best shield at every level: perceptual/political, "sea to swim in," use civilian casualties and collateral damage as shield and weapon of influence.**

- **Value of "distributed networks:" Loose hierarchies, core cadres, limited survivable communications, relatively static fighting create "humancentric" approach to "netcentric war.**

Common Lessons with Iraq and Vietnam - II

- **Acute sensitivity to casualties and hostages versus willingness to sacrifice. Armor, personal protection, tactics critical.**

- **Reliance on infantry, light/crew portable weapons, civilian vehicles, couriers and limited communications, MOBA, fighting in prepared areas all combine to create a low-tech form of stealth.**

- **Severe limits to targeting, prompt effective kills, BDA, and broader effects analysis still severely limit air and artillery operations.**

- **Low level tactical skills are critical. Training, discipline, motivation and leadership key.**

- **Must win on the ground and stay there to win.**

- **Defeat is always relative as long as sanctuaries and outside sources of aid and supply help.**

Lessons Relating to Missiles and Rockets

Rockets and UAVs as "Stealth"

- *Stealth is normally thought of as high technology. It is not.*

- *Conventional forces still have sensors geared largely to major military platforms and operating in environments when any possible target becomes a real target.* **None of these conditions applied to most Hezbollah weapons, and the problem was compounded by the fact that a light weapon is often easier to move and place without detection in a built-up area than a heavy one.**

- *Signature issue applies to small rockets* **like the Qassam and Kaytusha that require only a vestigial launcher that can be place in a house or covert area in seconds, and fired with a timer. Israeli video showed numerous examples of Hezbollah rushing into a home, setting up a system, and firing or leaving in a time in less than a minute.**

- *Also applies to UAVs.* **Israel's normal surveillance radars could not detect the Iranian UAVs, and the IDF was forced to rush experiments to find one that could detect such a small, low-flying platform. (This may be an artillery counterbattery radar but Israeli sources would not confirm this.)**

Longer Range Rocket/Missile Threats

■ **Israel did preempt before effective systems were deployed with the combination of accuracy and lethality to have more than political or terror impact.**

■ **Limited real-world lethality because systems used were not guided or precise, limits to targeting capabilities:**

☐ Syrian Ra'ad rockets with a maximum range of 45 kilometers and a and systems like the Fajr 3 and Fajr 5, with ranges of 45-75 kilometers, capable of striking targets as far south as Haifa and Naharia.

☐ Fajr 3, or Ra'ad, has a range of 45 kilometers, a 45-50 kilogram warhead, a 220 to 240-mm diameter, a 5.2-meter length, and a weight of 408 kilograms. A total of some 24-30 launchers and launch vehicles, carrying up to 14 rockets each, seem to have been present. Syrian 302-mm Khaibar-I or M302 artillery rockets with a range of up to 100 kilometers and a 100-kilogram warhead,

☐ Fajr 5, which is 333mm rocket with ranges of 70-75 kilometers. The Fajr 5 is launched from a mobile platform with up to four rockets per launcher, and has a maximum range of 75 kilometers, a 45-kilogram warhead, a 333-mm diameter, a 6.48-meter length, and a weight of 915 kilograms. A total of some 24-30 launchers and launch vehicles seem to have been present.

☐ Zelzal 1, 2, and 3 with ranges of 115-220 kilometers. The Zelzal 2 is a derivative of the Russian FROG 7, and has a range in excess of 115 kilometers and which some sources put as high as 220 kilometers. It has a 610-mm diameter, a 8.46-meter length, and a weight of 3,545 kilograms. It requires a large TEL vehicle with a large target signature.

☐

UAV Threat?

- **Question for the future.**

- Iranian Ababil can fly up to 300 kilometers per hour and carry up to a 45-kilogram payload. Had some 12-20.

- The system has a maximum range of 150 to 450–kilometers, depending on mission profile and payload, and a ceiling of 4,300 meters.

- Exact height at the time it was shot down is unclear, but it does not seem to have low-altitude terrain avoidance features.

- Two IAF F-16C to shoot down an armed Ababil with an air-to-air missile on August 8th. The Ababil did penetrate within 15 kilometers of Haifa, flying south.

- *It if had not been intercepted, it could have hit a target virtually anywhere in Israel, although its GPS guidance gives it at best a 10 meter accuracy and its payload is limited*.

☐

Rocket and UAV Threat "Growth"

- *10,000-16,000 rocket/missile inventory over 6 years.*

- *Several hundred (?) medium and long-range rockets and missiles. (Zelzal, 302mm,*

- *Detect and kill large TELs on first day and then after first round; medium and long-range rocket/missile inventory less clear.*

- *Syrian "Surprise" in deploying long-range missiles.*

- **Command center with Iranian assistance, survivable C3I to fire 200 per day by end of war.**

- **For future, no certain way to detect deployments of CBRN, area warheads; missile vs. rocket, guidance. Panic, "Weapons of Mass Media"**

    - GPS allows on the ground/precision LOS targeting.

    - Take apart TELs, built in country TELs, assemble missiles.

    - Sudden deployment, ship deployment, volley saturation of defense.

    - UCAV/Cruise adds complexity as small, low cross section, low flyer.

Lessons for Counterinsurgency

New Challenges : Neither "Toys" nor "Boots on the Ground" Will Work

- **First, warfighters must focus relentlessly on the desired outcome of the war and not simply the battle or overall military situation**

- **Second, warfighters need to understand, as Gen. Rupert Smith has pointed out, enemies will make every effort to try win counterinsurgency conflicts by finding ways to operate below or above the threshold of conventional military superiority.**

- **Third, warfighters and their political leaders need to acknowledge that enemies can fight above the threshold of US conventional ability, not just beneath it.**

- **Fourth, the US does need to improve counterinsurgency technology, but cannot win with "toys."**

- **Fifth, the best "force multiplier" will be effective allies, and interoperability with a true partner.**

- **Sixth, political legitimacy in counterinsurgency is measured in local terms and not in terms of American ideology.**

- **Seventh, the US needs to have a functional interagency process and partner our military with effective civilian counterparts.**

The "Whack a Mole" Lesson: "Win" for Six Weeks Without Hold

- Israel claimed up to 500-600 killed versus less than 100 admitted by various Hezbollah sources ("official" Hezbollah figure seems to be 71).

- Israeli officers made it clear that Israel sharply underestimated the number of trained and combat capable cadres that existed when the war started, the quality of their forward defenses, and their ability to take shelter, hide, and disperse.

- Israeli officials admit no way to really estimate the number of killed and wounded. The IDF does feel a significant part of the key leaders and cadres have been killed or captured but has given no details. Hezbollah deliberately never reports total forces or casualties.

- Estimates of core Hezbollah forces ranged from 2,000 to 3,000 before the fighting started, and that Hezbollah reserves range from several thousand to more than 10,000. The most that can be said is that substantial numbers of Hezbollah survive, and losses in killed, wounded, and captured probably range from 15-25% of the initial force. Probable numerical losses were offset by wartime recruiting of less experienced personnel.

- The ratio of casualties:Israel lost some 118 killed out of some 3,000-15,000 troops deployed into combat areas during various periods of the war. Even a best-case loss ratio of 6:1 is scarcely a victory for Israel, given its acute sensitivity to casualties.

Hezbollah Communications/EW

- **Reports of jamming and successful hacking/COMINT of IDF claimed to be untrue.**

- **Couriers, land lines, delegation made efficient IDF COMINT and SIGINT very difficult.**

- **Land-line and rear command center control of rocket launches to last day. Redundant C3I centers.**

- **Leadership and cadres largely immune to IDF COMINT/SIGINT.**

- **Never stop Hezbollah TV/radio and propaganda.**

- **Same aspects of "distributed networks" as Iraq, Afghanistan, Al Qa'ida.**

- **Liaison with Syria (Iran) preserved.**

Lessons for Airpower

Overall Role of Airpower

- **By August 10th, the IAF had flown some 8,000 fighter sorties and 1,600 attack helicopter sorties with no losses to combat.**

- **At the end of the war, it had flown over 15,000 sorties, some 10,000 fighter sorties, and lost one aircraft in combat and four in accidents.**

- **Initial focus was medium and long range missiles and rockets.**

- **Primary missions were attack on Hezbollah rockets, rear area targets and close support.**

- **Flew extensive coercive missions**

- **Sought to block resupply and reinforcement.**

The Mixed Merits of Airpower

- **Can kill big things, weapons, buildings with known functions that stay active.**

- **Close fixed and rotary wing air support excellent/land-air teaming steadily improving.**

- Most dense mix of sensors, UAVs, aircraft in history still could only find the big things, detect and characterize "flares".

- As usual, minimal impact in attacking leadership.

- Interdiction and counter-supply efforts had limited impact.

- Little killing capability against infantry and fighters in built-up areas.

- Poor hard point kills against shelters, communications.

- "Strategic" bombing failed to intimidate, suppress, force desired political action.

- Steadily escalating limits to collateral damage and civilian casualties.

Airpower, Escalation, and Jointness

- **Achieved major objective of striking most known Iranian-supplied medium and long range missile in days. (Did not initially know of many Syrian-supplied systems.)**

- **Then escalated to air-dominated effort to win by deep strikes and strategic bombing.**

- **Classic"Douhet" mistakes in overestimating impact of airpower in strategic bombing and political impact inside and outside Lebanon.**

- **Shifted to real jointness only at end of war when ground forces lacked meaningful war plan, objectives, and proper combination of maneuver and combined arms.**

Role in "Post Boost Phase Attacks

■ **The IAF reacted quickly to the fact that Israel sharply underestimated Syrian deliveries of medium range rockets.**

■ **Was able to create dense 24/7 sensor and attack coverage over much of southern Lebanon and attack and destroy almost all major Hezbollah missile launchers within minutes after they fired.**

■ **Helped improvise radar coverage to detect low signature Hezbollah UAVs and include them in its air defense activities.**

■ *But, IAF/IDF never published detailed estimates of success of anti-missile campaign*

The Problem of "Strategic Bombing"

- Like virtually all air forces and air operations before it, the IAF exaggerated its ability to use airpower to coerce and intimate governments and political behavior.

- Lebanon did not react to IAF efforts to force it to deploy south and shut down the Hezbollah in ways favorable to Israel. There certainly is no evidence to that IAF strikes did more than make Lebanese leaders turn to the international community for support in forcing Israel to accept a ceasefire, provoke Hezbollah leaders to even more intense efforts, and produce a more hostile reaction in the Arab world.

- The advocates of escalation to intimidate and force changes in behavior at the political level are sometimes right; far more often, they are wrong. More often than not, such attacks provoke more hostility and counterescalation.

- If there is a lesson here, it is that it been clear from Douhet to the present that the advocates of airpower have no better political understanding of this aspect of airpower than any man on the street and probably less. They tend to sharply exaggerate its ability to influence or intimidate leaders and politicians, and act as a weapons of political warfare.

Role in Counter Rear Area Targets

- **Less clear what IAF accomplished in interdiction missions, and how well carried out missions like attacking Hezbollah supply routes, facilities, and hard targets.**

- **Preliminary reports indicate that it hit a large number of targets that were suspect but not confirmed, and that Hezbollah dispersal and evacuations turned many into "empty holes."**

- **The IAF's ability to attack the Hezbollah leadership seems to have been very limited.**

- **Neither air nor special forces did well in attacking cadres in this war.**

The Physical Damage "So What" Lesson

- No convincing evidence interdiction efforts had major impact on fighting. Hezbollah relied on prepositioned equipment,and found emergency ways to work around damage; did more to hurt civilians than Hezbollah.

- Many attacks may have done Israel as much harm in terms of future hostility as good in terms of immediate tactical benefits.

- Value of most air strikes on rear area surface targets unclear. Prewar use did not mean were used in wartime or strikes affected Hezbollah warfighting capabilities.

- Limited ability to locate and hit targets and complexes with tunnels, shelters, underground facilities.

- When IDF did destroy fixed Hezbollah facilities both in the rear and forward areas, this was often of little value unless these held large amounts of munitions, however.

- Most Hezbollah facilities were not filled with high technology or valuable equipment, and the IAF and artillery strikes that hit such facilities in populated areas created substantial problems in terms of perceived attacks on civilians and collateral damage.

- Were never able to perform key roles like suppressing Hezbollah broadcasts.

The Civilian Casualty, Collateral Damage "Backlash" Lesson

- **Lebanon reported some 1,110 civilian dead, 3,700 civilians wounded, and 980,400 displaced at the peak of the fighting.**

- **It has also made claims that the war cost it some $2.4 to $6 billion worth of damage, some $398 million worth of damage to electric facilities and key infrastructure equipment, and over 150,000 residences destroyed.**

Role in Attack/CAS Missions:
The Positive Side

- **IAF seems to have has some effect in suppression missions with fixed and rotary wing aircraft– at least in missions supporting Israel's land operations.**

- **IDF army officers at the front noted that most such sorties were flown with delivery accuracies approaching 10 meters and close air support was extremely responsive. They also noted that in spite of the shallow front, air and artillery operated closely together.**

- **The IDF was able to deconflict air support and artillery missions, as well as fixed and rotary wing missions, with high levels of effectiveness. It fired well over 40,000 artillery rockets and some estimates go as high as 100,000 or more.**

- **These were often targeted interchangeably with air strikes, and precision GPS fire and target location allowed the 10-meter accuracies for many air and artillery strikes. (These data are average accuracies; substantial error can take place in individual cases).**

Role in Attack/CAS Missions:
The Negative Side

- **The IDF estimates that the Hezbollah had only one major line of fixed defenses and that these were in the areas near the border where the ground war was active after the first few days of the conflict. These defenses included shelters, storage areas, command posts, etc.**

- **After action reports indicates that air strikes had little physical effect on these sites and facilities and key shelter areas were not located until ground troops occupied them.**

- **Few signs of air inflicted casualties and almost no killing impact in cases, shelters, tunnels.**

- **Suppressive effect limited to operations at moment of air strike; could return to combat from sheltered and tunnel areas if not exposed.**

- **Air-land battle may well have shown the Hezbollah that deep shelters have value, but that taking advantage of normal civilian buildings and built up areas provides the same cover and facility capability, is much harder to target and predict, provides nearly the same ride out capability for concealed troops, and allows the Hezbollah to disperse, maneuver, and adopt a defense in depth tactic.**

The Problem of BDA

- **Discussions with IAF personnel indicate that it has the same continuing problems with making accurate battle damage assessments (BDA) during combat that have characterized since its creation, and which were major problems in the 1967, 1973, and 1983 wars.**

- **These problems characterize US and other NATO country air forces. The technical and analytic state of the art for both targeting and BDA still have severe limitations.**

- **Air forces almost inevitably make exaggerated claims in the heat of battle.**

- **These limitations are particularly clear in the record of postwar examinations of the actual impact of past air attacks on rear area targets, whether they are fixed enemy facilities, enemy supply routes and logistics, or leadership targets.**

Anti-Air Threat

- **IAF only lost one aircraft to hostile fire in some 15,500 sorties, although it lost four aircraft to accidents.**

- **Israeli intelligence estimated, however, that the Hezbollah the SA-7 (Strela 2/2M or Grail) and SA-14 Gremlin manportable surface-to-air missile system, probably had the SA-16 Gimlet, and might have the SA-18 and a token number of SA-8s.**

- **The SA-14 and SA-16 are much more advanced than the SA-7, but still possible to counter with considerable success. The SA-18 Grouse (Igla 9K38) is more problematic.**

- **Possible Hezbollah it may have been given a few SA-8 Gecko (Russian 9K33 Osa) SAM systems that are vehicle mounted, radar-guided systems with up to a 10-kilomter range, and six missiles per vehicle.**

- **IAF was concerned that these systems would allow the Hezbollah to set up "ambushes" of a few IAF aircraft without clear warning—a tactic where only a few SA-8s could achieve a major propaganda victory. This concern, coupled to the risk of SA-16 and SA-18 attacks, forced the IAF to actively use countermeasures to an unprecedented degree during the fighting.**

Anti-Air Lessons

- **New SHORADS create more lethal and unpredictable threat in terms of transfer, location, numbers.**

- **No way to kill or suppress.**

- **Limited kill capability.**

- **Force change in mission profile.**

- **Force expansive use of countermeasures.**

- **Like ATGMs, SSMs/rockets, anti-ship missiles, provide low cost force multipliers in asymmetric warfare.**

- **Syria, Iran Hezbollah, others already have learned this lesson.**

Lessons for Ground Forces

Ground Force "Classics"

- **Ground action must have a strategic and grand strategic purpose. Ground wars are won on the ground, no matter how helpful airpower can be.**

- **Wars of maneuver are preferable to wars of attrition.**

- **Readiness: Critical value of funding high readiness levels, and constant validation of actual readiness.**

- **Training: Critical value of Large-scale realistic exercises, challenging command post exercises, small unit and combined arms training, and reserve call ups.**

  - **Reserve forces take extra preparation.**

- **Clear War Plans and Objectives: Have a decisive plan and clear objectives.**

- **Effective joint operations and combined operations require effective war plans.**

- **Special forces require focused objectives, plans to support, tight coordination**

The Cost of Weak Training and Readiness

- **Neither actives or reserves trained at high levels for combat; reserve training particularly weak.**

- **Lack of both large-scale and small unit exercise training affected command and reactions at every level.**

- **Poor to very poor logistics.**

- **Move into Hezbollah ambushes in obvious terrain areas; bunched armor and troops and increased vulnerability.**

- **Slow movement and reaction allowed relatively static Hezbollah forces to get into IDF decision-making and maneuver tactics.**

- **Armored forces not prepared for swarming of Hezbollah ATGMs and other anti-tank weapons.**

- **Not trained to fight a Hezbollah force fighting from prepared positions, tunnels, in built-up areas.**

- **Special forces limited in role and sometimes committed to marginal objectives.**

MOBA Still Tends to Equalize the "Killing Ground"

- **Flexible use of defensive barriers in built-up areas is still effective; tunnels, hard points, hiding spots, prepositioned supplies still help.**

- **Fighting in the place you know offers significant advantages.**

- **Minimizes some aspects of insurgent C3I problems.**

- **ISW&R remains are major challenge.**

- **So do civilian casualties and collateral damage.**

- **At the end, key cadres tend to escape, casualties have relatively low value.**

- **The objective tends to become worthless or become a prison unless you can "win, hold, and build."**

- **There is always another built up defensive line unless MOBA shifts to decisive maneuver warfare.**

Tank, Anti-Armor Lessons

- **Swarming works**

- **New generation systems more lethal, easier to operate.**

- **All armor is vulnerable.**

- **Only heaviest armor can take lead in predictable lines of advanced.**

- **ATGMs kill people and facilities too.**

- **Can only directly defend on line of sight, attack basis.**

- **MOBA and terrain favor ATGMs.**

- **Tradeoffs in cost-benefit of legacies, upgrades, warning, active defenses uncertain.**

- **Strategy and tactics may be key defense.**

- *More generally, the cost of high technology and light arms killers presents a major threat: IEDs/EFPs, ATGMs, SHORADs/MANPATS, small cruise missiles all present a potential major increase in insurgent and asymmetric lethality.*

- *FCS? MRAP? Helicopters? Convoys? Tankers?*

Anti-Tank Missiles/Weapons

- **AT-3 Sagger, AT-4 Spigot (Fagot 9K111), and AT-5 Spandrel (Konkurs 9K113) wire-guided systems which become progressively more effective and easier to operate as the model number increases.**

- **TOW, Toophan, Russian AT-13 Metis-M 9M131 which only requires the operator to track the target, and the AT-14 Kornet-E 9P133, a third generation system, that can be used to attack tanks fitted with explosive reactive armor, and bunkers, buildings, and entrenched troops.**

- **Many bore serial numbers that showed they came directly from Syria, but others may have come from Iran.**

- **AT-14 can be fitted to vehicles or used as a crew-portable system. It has thermal sights for night warfare and tracking heat signatures, and the missile has semi-automatic command-to-line-of-sight laser beam-riding guidance. It flies along the line of sight to engage the target head-on in a direct attack profile. It has a nominal maximum range of 5 kilometers. Can be fitted with tandem shaped charge HEAT warheads to defeat tanks fitted with reactive armor, or with high explosive/incendiary warheads, for use against bunkers and fortifications. Maximum penetration is claimed to be up to 1,200mm.**

- **Improved version of the 105.2-mm rocket-propelled grenade called the RPG-29 or Vampire. Heavier system than most previous designs, with a tandem warhead. It is a two-man crew weapon with a 450-meter range, and with an advanced 4.5-kilogram grenade. Can be used to attack both armor and bunkers and buildings. Some versions are equipped with night sights.**

Damage to IDF Armor - I

- **Weapons used with great tactical skill, and few technical errors, reflecting the ease with which third generation ATGMs can be operated. Did serious damage to buildings as well as armor.**

- **Hezbollah used the same "swarm" techniques to fire multiple rounds at the same target at the same time often used in similar ambushes in Iraq.**

- **IDF sources initially estimated that at least 500 ATGMs were fired during the fighting. They reported that a total of 60 armored vehicles of all types (reports these were all tanks are wrong) had been hit as of August 11th. Most continued to operate or were rapidly repaired in the field and restored to service. Only 5-6 of all types represented a lasting vehicle kill.**

- **According to work by Alon Ben-David, the IDF concluded after the ceasefire that some 45% of the IDF main battle tanks that had been hit by ATGMs during the war had some form of penetration.**

- **A total of some 500 Merkava were committed to battle. Roughly five were destroyed by underbelly mines and tactics. Some 50 Merkava 2,3, and 4s were hit, and 21(22?) were penetrated. A total to 11 did not result in fatalities, but 10 other penetrations caused 23 crew casualties. ATGMs also produced major infantry casualties, particularly when IDF reservists bunched inside a building hit by an ATGM.**

  ☐

Damage to IDF Armor - II

- … We knew the organization had advanced anti-tank rockets; the IDF's Military Intelligence even acquired one. We also understood that Hezbollah was positioning anti-tank units; however, we failed to understand the significance of the mass deployment of these weapons.

- The result: Anti-tank weapons caused most of the IDF casualties in the war - nearly all the Armored Corps' casualties and many from the infantry units. More infantry soldiers were killed by anti-tank weapons than in hand-to-hand combat. Many of the infantry soldiers who lost their lives because of anti-tank weapons entered houses in the villages; the rockets penetrated the walls, killing them.

- … Hezbollah used seven different types of rockets in the war - four of them the most advanced available and all produced by Russia and sold to Syria. The most advanced rockets can penetrate steel armor of 70-centimeter to 1.2-meter thickness. After the armor has been pierced, a second warhead explodes inside the tank. MI acquired one of these rockets and understood that Hezbollah was positioning anti-tank units. However, the IDF was inadequately prepared for this development.

- Four Israeli tanks hit large landmines. Three of the tanks, which lacked underbelly protective armor, lost all 12 crewmembers. The fourth had underbelly protective armor; of its six crew members, only one died.

- Anti-tank missiles hit 46 tanks and 14 other armored vehicles. In all these attacks, the tanks sustained only 15 armor penetrations while the other armored vehicles sustained five, with 20 soldiers killed, 15 of them tank crew members. Another two Armored Corps soldiers, whose bodies were exposed, were killed. In another location, Wadi Salouki, Hezbollah carried out a successful anti-tank ambush, hitting 11 tanks. Missiles penetrated the armor of three tanks; in two of them, seven Armored Corps soldiers were killed. Two of the other tanks were immobilized.

Lessons for Naval Operations

Asymmetric Naval Threats

- **Anti-ship missiles can be used by irregulars. No way to be certain of when, where, how.**

- **Only one tool. See floating mines, small craft with low detectability, suicide attacks, RPGs, floating mines, UAVs.**

- **Land and sea-based SSMs and rockets.**

- **Infiltration and arms shipments, not just attacks. (Gaza key zone).**

- **Targets can be ships, land, offshore.**

- **State actors like Iranian IRGC long a major threat.**

Anti-Ship Missiles: C-802

- **Hezbollah C-802 missile that damaged an Israeli Sa'ar 5, one of Israel's latest and most capable ships, struck the ship when it was not using active countermeasures.**

- **It may or may not have had support from the coastal radar operated by Lebanese military fires destroyed by IAF forces the following day.**

- **Yingji YJ-2 (C-802) is powered by a turbojet with paraffin-based fuel. It is subsonic (0.9 Mach), weighs 715 kilograms, has a range 120 kilometers, and a 165 kilogram (363 lb.).**

- **Small radar cross section and skims about five to seven meters above the sea surface when it attacks the target. It has good anti-jamming capability**

Putting the Lessons in a Broader Context: Learning From Both Israeli and US Mistakes

Complexity of the "Long War"

- **Struggles to deal with national threats, often of very different kinds and fought on different terms;**
- **International struggles to defeat terrorist movements that cut across national lines, and often cultures, political systems, and religions;**
- **An ideological and political battle against Islamist extremism, and tensions between the West and Middle East, that act as a breeding ground for terrorism and the tolerance or support of terrorist movements;**
- **A struggle to deal with new forms of national and global vulnerability such as proliferation, increasing dependence on information technology and netting; critical infrastructure, and the secure, just-in-time flow of global trade.**
- **The problem that terrorism/insurgency cannot be separated from asymmetric warfare and insurgency, state use of terrorists as proxies or false flags, or terrorist use of states as sanctuaries.**
- **Cannot separate forces or technology from need for humanitarian, nation-building, stability operations.**
- **All military actions have broader consequences, part of information warfare, public diplomacy, war of perceptions.**
- **More than local perceptions count: World opinion, world media, NGOs, UN, etc.**

Redefine Jointness: Similar Israeli and US Lessons from Iraq and Afghanistan

- **Democratic national command structures are extremely unlikely to be prepared for the full complexities of war.**

- **Checks and balances are critical in deciding to go to war and to escalate.**

- **War must be tied to grand strategy and conflict termination**

  - ☐ **Must be a working interagency process to link political leadership, command, intelligence, and diplomacy.**

  - ☐ **Need practical plans and capability to execute conflict termination and deal with aftermath.**

- **Limited war and escalation planning require new civil-military jointness, gaming, modeling, and independent voices.**

- **Ideology and belief structures are no substitute for realism.**

Redefine Jointness: Different US Lessons from Iraq and Afghanistan

- **Concept of Civil-Military Operations**
  - **Inter-service of course, but not enough**
  - **US plans now recognize that there is a civil military triad where dollars = bullets, and "governance" and "development" are as important as "security."**
  - **Ideological, political, diplomacy, psyops, and information warfare should become fourth element of this "triad."**

- **New priorities for Jointness:**
  - **Civil-military, logistics, force protection/rear areas**
  - **Advisory efforts, embedded training teams/operations, provincial recovery teams**
  - **NSC, State, Homeland Defense, Embassy, command team**
  - **Local forces, allied ministries, local governance, police/courts**
  - **Support UN, NGO, World Bank/IMF – hierarchy of integration.**

Rethinking Force Transformation

- *In all but existential conflicts, understanding these issues involves learning how to fight in built-up and populated areas in ways than deprive the enemy as much as possible of being able to force the US and its allies to fight at their level and on their own terms.*

- *Learn what cannot be done, and to avoid setting goals for netcentric warfare, intelligence, targeting, and battle damage assessments that are impossible, or simply too costly and uncertain to deploy.* **No country does better in making use of military technology than the US, but nor is any country so wasteful, unable to bring many projects to cost-effective deployment, and so prone to assume that technology can solve every problem.**

- *US needs to approach these problems with ruthless realism at the political, tactical, and technical level.* **It needs to change its whole set of priorities affecting tactics, technology, targeting, and battle damage to give avoiding unnecessary civilian casualties and collateral damage the same priority as directly destroying the enemy.**

- *This means working with local allies and improving HUMINT to reduce damage and political impacts.* **It also means developing real time capabilities to measure and communicate what damage has actually been done. The US must use the information to defeat hostile lies and exaggeration but also to improve performance in the future.**

Short-Term Tactical "Fixes" are Case Specific and Largely Field Driven

- **One Size Does Not Fit All; Malaysia is not Vietnam is not Iraq**

- **Requirement: Field-driven, Field-Approved, or Does Not Exist.**

- **Final Product: Field-proven, Field-adaptable, Built in MOEs.**
  - **Never let Program Manager or Manufacturer (Contractor) report on effectiveness.**
  - **"First Do No Harm"**

- **Workload, Training, Integration Critical**

- **Survive *this* Adaptive & Creative Enemy**

- **Transferable to Range of Allies**

- **A "Net" is Not a Half-Assed IT Dinosaur or a Failure Prone Toy**

Longer-Term Tactical, Strategic, And Grand Strategic "Fixes" are Different

- **Need Modular, Upgradeable, Flexible Systems for "Long War."**

- **Do Not Replace Existing Warfighting Needs, *But***

- **QDR 2006, New JCS National Military Strategy for Counterterrorism raise additional needs:**

  - ☐ **Collateral damage, political situational awareness, "war of perceptions," "strategic corporal" critical.**

  - ☐ **Effects-based operations probably impossible, but must try to measure "backlash" effect.**

  - ☐ **"Jointness" often Interagency**

- **Allied use and support at NATO, UN, and local level critical.**

New Forms of Situational Awareness

■ **"Blue force, red force, gray force, "red card" tracker: US/allied, insurgent/terrorist, neutral/public situational awareness with clear no strike/no go/sensitive flags.**

■ **Effects-based warning versus Effects-based operations.**

■ **Focus on key hostile systems: IEDs, urban low-level, targeted killing, allied protection.**

■ **Rethink damage assessment.**

■ **Political awareness: Internet, Media, Public Opinion.**

■ **Near-realtime "fusion."**

■ **Reliable, non-hierarchical field distribution.**

New Types of Force Protection

- **Active and passive armor, uparmoring, detection.**

- **Legacy system modification, renovation, and upgrading. (M1A1 vs. FCS)**

- **Personal protection: IED, mine, fragmentation, sniper.**

- **Warning and avoidance systems.**

- **Area surveillance and near-real time warning: Red Force Tracker on Blue Force Tracker.**

- **Facilities protection; barriers and area defenses.**

- **Secure area entry and activity security.**

- **Real-time precision fire support.**

- **Secure, high speed logistics.**

- **Cut service support and rear area footprint.**

Redefining Precision, Targeting, and BDA

- **Near real-time strike capability to support operations through theater include convoys and logistics.**

- **Redefine "effects based" operations in "long war," political, and asymmetric conflicts or reject the impossible.**

- **Target, kill, and reliably confirm BDA by the man, the cadre, the home, vehicle, and non-military installation.**

- **Precision kill in MOBA with minimal civilian losses and collateral damage.**

- **Know the casualties; establish record to prove limits to civilian losses, collateral damage, target "guilty." Avoid "weapons of mass media."**

- **Allied interoperability.**

Supplement/Replace HUMINT

- **Rethink the red side of netcentric. Red tracker-plus**
- **Find the man, the cadre, know the building.**
- **Real-time and persistent "fusion" of HUMINT, UAVs, UGS, COMINT, SIGNIT, ELINT, PHOTINT.**
- **Adaptable to new languages and cultures.**
- **Field deployable displays, protected command/intel centers.**
- **Clearly oriented towards IFF, avoiding innocent.**
- **Capable of interoperability.**
- **Automated, quasi AI, analysis and displays.**
- **Transparent with man in the loop.**

Rethink Missile, Rocket, Air Defense

- **Wars validate need for TABMs with wide area theater coverage; cruise missiles, advanced air,**

- **BUT,**
  - ☐ **Rapid mortar, artillery location and kill equally critical.**
  - ☐ **Artillery rocket defense at single round and volley level.**
  - ☐ **Looking at blurring of rocket versus missile: Ranges of over 100 KM, "stealth" TELs.**
  - ☐ **Instant warhead type characterization: CBRN problem (Must be reliable, characterize, and no false alarms.**
  - ☐ **Suicide aircraft, UCAVs, commercial ship, jury-rigged cruise and launcher.**
  - ☐ **Attack modes shifts to short range tactical: Locate, preempt, kill in boost phase or TEL after first round.**

"Alliedcentric" Systems

- **Shared systems/real-world interoperability.**
- **Not just military: Ministries, security, police, governance, courts.**
- **Compartmented security with maximum transfer**
- **Simple, maintainable, training built-in.**
- **Transferable legacy; affordable sustainment**
- **Faster decision-making loop, but:**
  - ☐ **People cheaper than IT.**
- **Accept uncertain status of "ally:" Risk of changing sides, ethnic/sectarian/tribal rivalries and shifts.**
  - ☐ **Time limit/off switch/IFF-self defeat/destruct**

Complex Counterinsurgency I

- **Detect, characterize, and attack informal, affiliated, non-hierarchical networks**
  - **Non-state actors cutting across national and regional lines with multiple centers of conflict.**

- **Support public diplomacy/political warfare: Give allies key role.**

- **Deal with reactive, delegated, disassociated cells and "emirs."**

- **Communicate insurgent/terrorist propaganda, political actions in real time; monitor public opinion.**

- **Monitor and warn of new tactics, actions, ideology on global basis.**

Complex Counterinsurgency II

- **Link aid, economy, infrastructure into situational awareness.**

- **Create common, integrated reporting with measures of effectiveness.**

- **Support interagency needs in US; communicate field needs.**

- **Embassy team-centric, with advanced field (Provincial reconstruction team) capability.**

- **UN, NGOs, World Bank, etc.**

- **Define role for news media.**