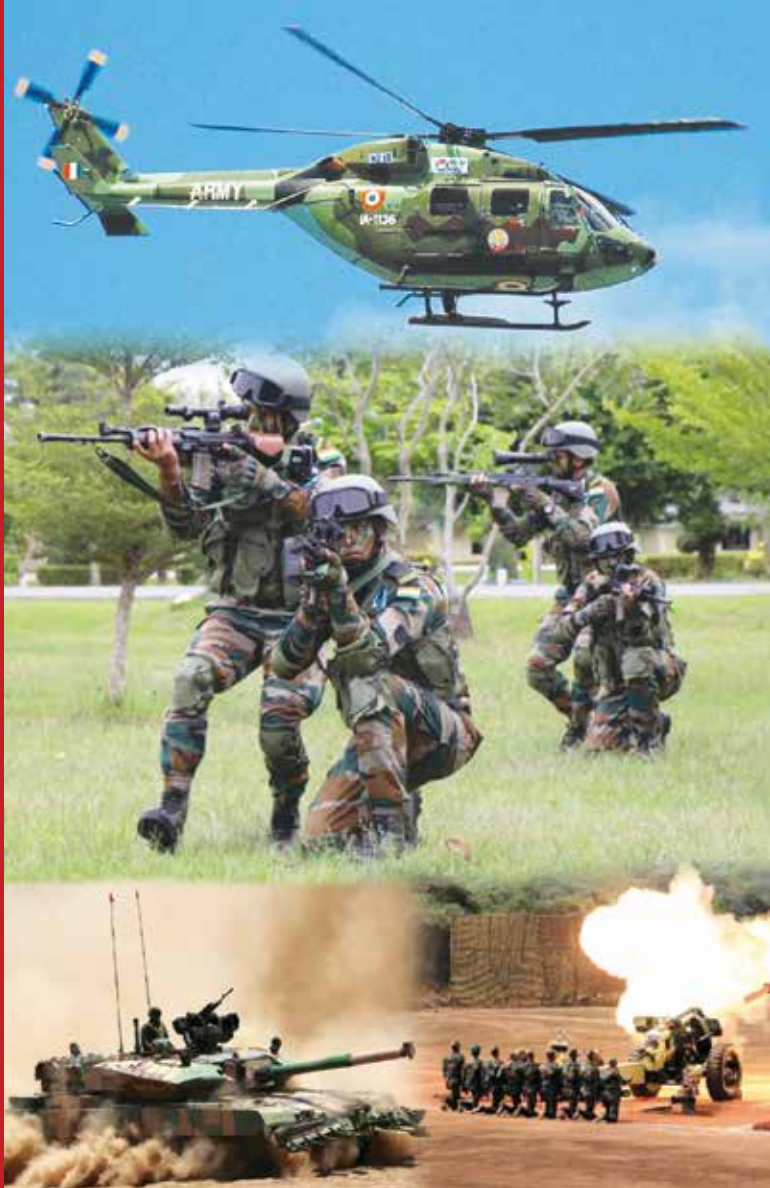




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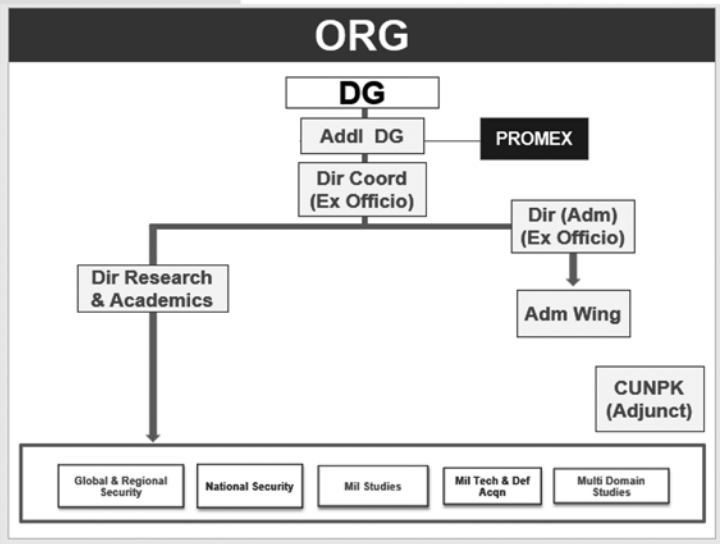
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CLAWS and MAHE have jointly signed a Memorandum of Understanding (MoU) to initiate PhD programme for Officers in broad subjects that include Geopolitics, National Security, Strategic Studies and International Relations. MAHE, Manipal, is one of the few universities in India that has a separate department of 'Geopolitics and International Relations'. As mentioned on the MAHE website, The Department of Geopolitics and International Relations focuses research on almost all the geopolitical regions with a greater focus on East Asia and South Asia, Strategic Technologies for National Security with a Focus on Outer Space, Nuclear Strategy of Major Powers, Delivery systems of China and Pakistan, Global Security Challenges, Dimensions of National Security, India's Foreign Policy Challenges, Cyber Warfare and Critical Infrastructure Security, Maritime Security, Indo-Pacific Security Architecture, Counter terrorism, Insurgency and asymmetric Conflict. In addition to above, certain additional subjects have also been proposed to MAHE for inclusion and consideration.

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Note from the Editor

Since the past two years, the world is going through yet another phase where the chances of regional wars metamorphosing into a World War are very high. The conflicts in Ukraine and Gaza are continuing; they are almost a routine affair in the newspapers. Especially for those not in the immediate region. But within the regions they are like burning fuses. In spite of the war in Ukraine being an endeavour to limit NATO expansion, NATO has in fact expanded with Finland and Sweden having joined it. Being aware of all aspects of these wars is important for us in India. The two most important ones for the military are firstly, to learn as how to fight in the present and future battlefield environment and secondly, to ensure how to safeguard our strategic and security interests.

Section I of this issue of the Scholar Warfare is therefore focussed on the Ukraine and Gaza wars. The first article is 'Evolution of Land Warfare: Gulf Wars to Ukrainian & Gaza Conflicts' by Group Captain (Dr) K Ganesh who writes that the conflicts underway in Ukraine and Gaza can be viewed as a 'Revolution in Military Affairs', involving technologies that are disruptive and with elements that are not just novel but have shifted the paradigms of military warfare that have been held until now. In the next article 'Relevance of Tanks: The Gaza Story' Major General Jagatbir Singh brings out how the wars in Gaza and Ukraine have highlighted the importance of armour despite all its shortcomings in the present battlefield milieu especially in urban warfare. This is followed by a researched article on the 'Use of Rockets and Missiles in Recent Conflicts' by Lt Gen PR Shankar, who writes that rockets and missiles are being increasingly used as geopolitical tools of coercion in the two wars, not only by states, but more so by non-state actors as a preferred tool of power. Major General Prabdeep Singh Behl writes about 'Offensive Operations in Urban Terrain: Lessons from Ukraine and Gaza'. He discusses how the conflicts in Ukraine and Gaza have shifted the war-fighting paradigm to new dimensions. The article examines how much and what degree of engagement in urban warfare should the Indian Armed forces visualise for themselves and if India's fighting doctrine needs re-configuration in light of the lessons learnt from these two conflicts so far. The next article, 'War Against Civilians: New Trend or Old Wine' by Major General AK Chaturvedi brings out

that while wars in which civilians are deliberately targeted may appear to be a new way of war, civilians have always been targeted inadvertently or deliberately in war. Where targeting is deliberate it is to bludgeon a population or country into submission.

Section II is about Geopolitics. This section too is focussed at these two wars though in the sphere of war prevention and protection of maritime shipping. Threat to shipping is a spin-off of these wars. In addition, the scourge of piracy rears its head when there is disorder in the world. Maj Gen (Dr) AK Bardalai, a renowned UN affairs expert writes on 'UN Security Council and the Israel and Hamas War: A Review'. He brings out that in spite of its apparent powerlessness the UN Security Council can play an important role in shaping the world opinion to put pressure on powerful nations, especially the permanent members of the Council to come to terms to find a negotiated solution to a conflict. The next article is 'Scale and scope of the Houthi Threat to Shipping' by Commodore Anil Jai Singh. The author examines the impact of the conflicts in Ukraine and Gaza in the maritime domain. He and brings out why securing the maritime global commons is extremely important. He analyses the problem and brings out the steps the world as well as India have taken to safeguard maritime shipping.

Section III has two articles dealing with internal security and the region. The defence analyst Colonel Nilesh Kunwar writing on 'On Iran-Pakistan Rapprochement' states that after Pakistan's tit-for-tat strike into Iran in January 2024 tensions have been quickly checked for now. He carries out an assessment of these tensions and how they affect the region. In the article 'Securing the India-Myanmar Border: Case for Proactive Trans-Border Approach' the journalist and scholar Subir Bhaumik writes that a consistent trans-border quasi-interventionist posture is needed to aggressively protect Indian interests.

Section IV is on Technology, Weapons and Defence Acquisition. Indigenisation in the defence sector is the focus of the article 'Indigenisation a Path to Modernisation and Self-Reliance' by Lieutenant General Dushyant Singh, the author brings out the status of India's quest for self-reliance in technological advancement. He gives recommendations for enhancing self-reliance in an era when wars and sanctions can disrupt supply chains. The next article is by the cyber security expert Colonel KPM Das, National Cyber Security Officer for Cisco in India. Writing on 'Cyber Security Challenges to Command-and-Control Networks in the Operational Battlefield' he discusses the major cyber security factors impacting tactical levels of operations and discusses some architectural considerations, approaches, and recommendations for addressing this issue. In

the article 'The Versatility of Drones: Implications for the Indian Military' Amit Gupta, a former faculty of the USAF Air War College writes that India needs a joint drone acquisition policy for the its armed forces as well as a coherent and effective way to acquire and produce these weapons. He is emphatic that India must start investing in drones now so as not to lose the technological edge in a rapidly-evolving field of conflict. The last article in this section is on the Joint Venture to manufacture the AK 203 rifle 'Development of AK 203: Challenges & Prognosis' by Major General AK Senger, who as the first CEO & MD of the joint venture brings out major challenges which retarded the desired pace of the project. He crystal gazes the future trajectory of the project.

Section V, which is HRD and Leadership has one article concerning a sphere which the forgotten in the glitz and glamour of war and the machines that fight wars. That is the man behind the machine. The article is 'The Long View: Perspective of a Battalion Commander' by Colonel Santosh Pitre. A serving battalion commander he writes this article based upon his practical experience. Our army would benefit so much in case more serving young and middle rung officers wrote on this and related subjects.

This issue of the Scholar Warrior closes with two book reviews. These are of the books 'Conflict: The Evolution of Warfare from 1945 to Ukraine' authored by David Petraeus and Andrew Roberts and 'Grey Zone Warfare: Way Ahead for India' authored by Lieutenant General Dushyant Singh.

Happy Reading, and as always, we would welcome any suggestions on the CLAWS publications.

Managing Editor



SCHOLAR WARRIOR

SECTION I

STRATEGY,
CONCEPTS &
DOCTRINE

CENTRE FOR LAND WARFARE STUDIES

Evolution of Land Warfare: Gulf Wars to Ukrainian and Gaza Conflicts

K GANESH

Abstract

The Gulf Wars and the conflicts underway in Ukraine and Gaza can be viewed as a 'Revolution in Military Affairs', involving technologies that are disruptive and with elements that are not just novel but have shifted the paradigms of military warfare that have been held until then. If the America-led wars against Iraq were like a golf green, the present conflicts represent an Indian wrestling pit. If one epitomised Hyper War and Manoeuvre, the other represents Hybrid War and Attrition. If the Gulf Wars had reduced the infantry to the role of a scout, the present conflicts have seen the rebirth of the infantry as the all-in-one war machine.

Introduction

The Gulf Wars were studied in great detail by militaries, forcing many to reorganise themselves into composite brigades, where the formation was an amalgam of infantry, armour and artillery along with support elements and aviation in a dedicated tandem, with emphasis on mobility and smart weaponry. It was the culmination of the evolution of manoeuvre warfare, as recalled best in the 1985 bestseller, 'Race to the Swift—Thoughts on 21st Century Warfare' by Richard E. Simpkin. It was in the First Gulf War that, for the first time, journalists were embedded and the television feed came from the missile cones as they acquired

their targets, and the surgically precise effect of munitions entered the drawing rooms of Western homes packaged as entertainment. The two Gulf Wars saw more casualties due to friendlies than ever before. In the First Gulf War, 41 percent of US casualties were due to 'friendly fire'.¹ However, in military terms, neither the conquered nor the conquering had body counts as a burden. The wars sanitised the war zone where the messy aspects of war appeared distant due to stand-off ranges of engagement and brought in Hyper War where technology (machine) was superior to man.

As we reach the 24-month milestone of the present Ukrainian conflict called Special Military Operation (SMO) by the Russians, we can say that these 24 months have been full of lessons that have upturned every wisdom the world of military strategy and analyses had gleaned from the Hyper War showcasing Gulf conflicts at the advent of the new millennia.

Present Day

As we reach the 24-month milestone of the present Ukrainian conflict called Special Military Operation (SMO) by the Russians, we can say that these 24 months have been full of lessons that have upturned every wisdom the world of military strategy and analyses had gleaned from the Hyper War showcasing Gulf conflicts at the advent of the new millennia. If shock and awe was the mesmerising mantra of that epoch of American prowess that astonished the world, the present conflict is built on the bedrock of soldiering and sustainability. After a decade of switching over to the Composite Brigade organisation, the Russian army reverted back to regular regiments and units with triangular formations under divisions.² Rybar, Verposte and other Cyrillic channels now regularly refer to Russian formations as divisions or groups unlike in 2022.

Pitched battles dubbed 'meat grinders', have been the norm in Bahmut, Artemovsk, Soledar, Krasny Liman and now Avdiivka, as they were initially in Mariupol. Unlike Mariupol where the Chechen 'Ahmet Militia' cleared the town street by street, regular infantry supported by artillery, armour and aviation are at the forefront in Avdiivka. Bakhmut was a mixed operation with the Private Military Contractor (PMC) Wagner Group playing a central role. To understand the effectiveness of the Russian military makeover, a reader can go through another version of this piece by an American think tank and then corroborate it with the present military briefings of Russian and Ukrainian news channels, about the situation in the east where the AFU (the military forces of Ukraine)

Metaphorically the new version of the infantry soldier is being tasked like how the mythological *Narasimha* was—to be able to deny and destroy the *Hiranyakashipu*s of these times, by decoding and derailing the fuzzy logic that protects them.

is encircled.³ Unfazed by various West-based or West-leaning news agencies, the author has analysed this European conflict by using inputs available from Cyrillic media (Telegram channels).

The media management of this conflict is a full subject by itself and is not being covered in this article, even though media credibility is an important factoid in military morale and national narrative goals.

Star Wars

Star Wars is an American space epic helmed by ace director George Lucas with a cult following. It is set against a backdrop of intergalactic conflict involving republics and empires. There are multiple alliances and groups and diverse peoples involved. So, is it in this war. The Russo-Ukraine war, with a stretch of imagination, can be studied with Star Wars as an impossible acronym that gathers, under its sweeping arc, the aspects of the conflicts of the 2020s post-pandemic conflict, which could be dubbed as the 'Age of Machines' because of the ubiquitous drones and AI-enabled systems that are now in play. We could realistically and imaginatively call it STAR WARS (System for Terrain Acquisition and Reconnaissance Warriors Armed and Repurposed Selectively).

If we can blur the boundary between non-state and state in military affairs, then whether it is the militia that is challenging the American and Israeli military in West Asia, or the Russian-origin military formations that are in Ukraine fighting the SMO, we can see an effort to cope with Hyper War. These conflicts have clearly done away with the 'shock and awe' effect of American military strategy. The paragraphs below analyse some of the salient aspects which have arisen from this new STAR WARS.

The Metamorphosed Infantryman

One can see how counter-effective and counter-intuitive the metamorphosis of 'boots on ground' has become in this new avatar of a once-ubiquitous creature—the 'infantry man'. Metaphorically the new version of the infantry soldier is being tasked like how the mythological *Narasimha* was—to be able to deny and destroy the *Hiranyakashipu*s of these times, by decoding and derailing the fuzzy logic that protects them. So, the new 'warrior' is armed and repurposed as per

the dynamic environment thrown up against him. It includes field engineering that is concrete and entrenched, aviation assets that are directly and remotely controlled by him, mobility assets that can carry two-man teams as well as sections and platoons, that include gliders and new Anywhere Take Off and Land (ATOL) Drones. So, like the avatar, *Narasimha*, the warrior infantry soldier of the 21st Century is ready to meet the enemy by day or night, on earth or sky, in built-up areas or open terrain, through manoeuvre or from dug-in positions, equal to scenarios that even the best computer 'battle games' geeks can scarcely imagine, by piece or pace.

Drones

Drones are now a staple source of air power. More comprehensively, they are part of the 'system for terrain acquisition and reconnaissance' as well as being used to drop supplies/ordnance. They are as much a part of offensive aerial assets as are missiles of all classes and nomenclatures including hypersonic ones launched from strategic fighter-bombers. They are light and flexible imparting multiple capabilities to the infantry. It is as if, the infantry now has its own air force, armour, artillery and engineering, and if we could relate to what Ansar Allah is doing in the Red Sea, (perhaps stretching the logic a little)—its very own navy! All that it takes is a warrior sufficiently motivated and highly imaginative who can exploit these fast-developing technologies and embrace their shape-shifting battle tactics and strategy. This is the biggest find from monitoring of hostilities that broke globally across theatres, from Nagorno Karabakh, through Ukraine to West Asia in the past half a decade. The analysis of how unwieldy and incapable conventional military strategy and tactics appear when confronted with the efficacy and impact of drone technologies is as yet too early. But it will be required as conclusive evidence is gathered at the end of the conflict. It is most likely that when done it will unmistakably be a shattering of military premises and precepts that would take Clausewitz and Manstein back to the drawing board.

Using a drone to recce or acquire targets is akin to a surgeon using a fiberoptic scope or a robotic arm in the field of surgery. However, like how surgeons have taken to imaging devices like fish to water, the warriors on the ground and in their command centers of the Ukrainian or Russian military have shown themselves adept in the use of drones for all manners of military manoeuvre. Drones as loitering munitions, drones as target designators, drones as field intelligence inputs, drones as psychological warfare components and more, examples are aplenty from the SMO experience. The biggest challenge for

The biggest challenge for conventional militaries is the asymmetry of costs between the drones being launched by Russia and the AD missiles from NATO being used to bring them down.

conventional militaries is the asymmetry of costs between the drones being launched by Russia and the AD missiles from NATO being used to bring them down.

President Regan's Star Wars, which was the most bandied topic just before America won the Cold War and the Soviet Union was dismantled, was about a system of countering the ballistic missile threat by

deploying weapons in space itself to shoot down incoming ballistic missiles. This then whittled down to the Theater Air Defence concept with the setting up of THADs (Terminal High Altitude Area Defence). These systems were prohibitively so costly that they are yet to roll out for NATO itself. Now one can imagine if these THADs were pitted against Shaheed drones, that cost a pittance by comparison, what the sustainability aspect would be. The second logic is how quickly can sophisticated missiles, which are part of systems like NASAM or THAD, be produced compared to these 'cottage industry'-level drones? The third is the human angle. The drone strike in Tower 22 in Jordan was a stunning example of how the envelope created by an incoming home drone of the US detachment there was used by the Iraqi rebel group to penetrate the air defence of Tower 22 and strike to devastating effect.⁴

Multilayered Defence

What has been the most important asset to the warrior is the ability to adapt to the situation. Faced with a Ukrainian campaign that threatened to sweep Russian positions and reverse the gains of the SMO in November 2022, which was sort of a 'blitzkrieg', the Russian military genius came up with a concept of multilayered defence system which has been studied and commented upon by analysts. Like moths to a flame, the Ukrainian military has thrown forces at these lines of entrenched Russian positions only to be degraded by artillery, which is a mix of conventional artillery including mortars, missiles with multi-barrel rocket launchers, drones, and aerial platforms like Su 25, MiG 35 and Su 30 in fixed wing and Alligator Ka52 in rotary wing. Russian positions would then fan out to undertake mopping operations to complete the rout of the advancing Ukrainian forces—now retreating. This has happened in Artemovsk and now in Avdiivka on a large scale and is being replicated elsewhere even as the Ukrainian military attempted majorly for the better part of 2023 to undertake this ill-

fated 'summer offensive'. It is not as if the Russian lines remained fixed. They moved incrementally and took advantage of the terrain to hold newer defensive positions where the defile offered a natural advantage to their positions, for which the reconnaissance work was done in advance and assisted in real-time by using satellite cartography and aerial assets to ensure coordinated engineering efforts to hone the advantage of terrain offered by the new position.

In many instances, Russians used heavy bombing and larger calibre missiles from the rear to reshape the terrain to their advantage in addition to using tracked and wheeled earth-moving equipment. Ukrainian positions in Donbas had the advantage of being set up over nearly half a decade of conflict when much of the region was uncontested and the Ukrainians had complete air and land cover to offer uninterrupted military engineering to cement their lines of defence. Yet, the manner in which the Russians systematically dismantled these trenches and fortresses, even as they came up with their own in a telescoped timeline, is something that needs to be studied. This is because the difference between the casualty burden on Ukrainians and Russians is just this—field engineering and craft that allowed Russians a decisive advantage and imperiled the Ukrainians.

The Russian innovation of making a 30 km-long movable defensive line based on 2,100 train freight bogies is another example of ingenuity in using existing resources imaginatively.⁵

Importance of Field Engineering to Defeat Firepower

If the dug-ins of the Russian formations appear to be a winsome proposition, then one can consider the tunnelling ingenuity of Hamas, a rag-tag militia, that does not have any of the capabilities and military-industrial support that a regular military would have. By their own admission, the Israeli Defence Force (IDF) has assessed that much of the subterranean tunnels that create the Hamas command and control as well as deployment network under the Gaza are intact after more than 100 days of aerial bombing, shelling, pouring of sponge-like chemicals, use of gas, or flooding with seawater.⁶ The amount of explosives that have struck Gaza are more than those that Americans used over their entire Afghan effort in two decades, considering the relative size of the Strip versus that of Afghanistan and the rocky uneven terrain that forms most of this subcontinental landmass in contrast to the desert-like flat and soil-laden Gaza. Closer home the comparison of Iraq and Syria was also added by Middle East expert Charles Lister after the first week of the IDF's Gaza bombing. Lister brought out that in six days of the

The evidence that Ukraine and Israel have not achieved their military objectives set out at the beginning of their campaigns (summer offensive or Gaza operations) is undeniable and indirectly it confirms the importance of field engineering, of advantages of defensive tactics in built-up areas and the diminishing returns of attritional warfare.

IDF bombing on Gaza, post the 07 Oct 2023 attack, 6000 tons of bombs were dropped which was more than what the US dropped in Afghanistan in one year.⁷

So how do NATO or West's tactics fare against these fixed-line defences? Whether it is the IDF's losses in the Gaza war or Ukrainian and foreign mercenaries' losses in SMO, we have no accurate way of assessing casualties and effective degradation of formations. The only way to know is to from whatever can be deduced from formations being rotated out, or reequipped, or by news reports of occasional casualties from a particular incident or conflict zone—Bahmut in case of AFU and Khan Yunis in

case of the IDF—that attacks have not fared militarily as well as envisaged. The evidence that Ukraine and Israel have not achieved their military objectives set out at the beginning of their campaigns (summer offensive or Gaza operations) is undeniable and indirectly it confirms the importance of field engineering, of advantages of defensive tactics in built-up areas and the diminishing returns of attritional warfare to that military that is under pressure to acquire terrain and territory.

Operations at Sea

Sea denial versus sea dominance is an entirely broad subject by itself and one which is not in the scope of this present review. However, considering the heated discussions over Chinese tactics where war games envisaged that the efforts of China was likely to take down American aircraft carriers using missiles in any trans-Strait conflict over Taiwan and the building of man-made islands in shoals and reefs in the South China Sea for air landing strips and marine platoons to create platforms for sea dominance, we need to briefly visit the tactics of the Houthi Ansar Allah insurgent group. They have successfully thwarted the attempts by the Combined Maritime Forces (CMF) as well as the special purpose Operation Prosperity Guardian. These Western efforts have not dented the capabilities of Ansar Allah of denying the Red Sea to merchantmen of the West, particularly Israel.⁸ This led to the American and British aerial

bombing campaign targeting Yemen which too has not deterred the interdiction of Western shipping by the insurgent group. The terrain of Yemeni beaches and the narrow waters of the Red Sea region allows for the use of hit-and-run tactics and even shore-based missile firing that has frustrated the American-led coalition here.

This is being done by a rag-tag insurgent group. One can imagine what the Chinese PLA Marine forces can do in the South China Sea as part of similar sea denial operations should a contingency arise in this theatre. Using drones that are undersurface, seaborne and aerial, using missiles and hypersonic missiles that can devastate sea-borne platforms from depth areas or shores or even seaborne crafts, Chinese marines can impose huge costs for the Indo-Pacific Quad or allied fleets, or both, that could be brought into play for any contingency in this theatre.

With their meagre resources, one area the Ukrainians can claim relative victory is in how they have put the Russian Black Sea Fleet on notice using sea-launched surface and subsurface drones, long-range missiles and aerial drones to cause damage to the fleet. This had added nervousness in Moscow over how tenuous it's hold is on the Azov and Crimean littoral and it has disproportionately diverted military resources along the coast and within Crimea. This the Ukrainians have managed with minuscule naval assets.

Conclusion

The constraints about researching or analysing events that are very recent such as SMO and the Gaza-centred Middle East scenario is that the West has clammed up. There are far too few articles or reports about the military scenarios that are getting played out in these fronts. If at all there are articles in European or American media or research institutions, they offer little to analyse what went wrong in either the Ukrainian summer offensive or with ongoing American and Israeli operations in the Middle East. However, this much is clear that military trainers and planners need to re-envisage the warrior-soldier. An image that comes to mind is from a popular teenager comic panel, Archies, where a character called Jughead is challenged by an alien to a game on a machine/console, and when Jughead defeats the alien in the game scenario, the alien calls off the invasion of Earth. So, a warrior now is a whole new 'all of systems' resource person, whose mental and physical agility and adaptation is key to military success. An ancient Indic stratagem that a nimble mind is mightier than brawn, gets rethreaded to read—a nimble mind backed by mighty brawn! A geek,

a gladiator, and a gizmo freak rolled into one! This then is the metamorphosis of the humble infantry soldier into STAR WARS. This is the evolution of land wars.

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Relevance of Tanks: The Gaza Story

JAGATBIR SINGH

Abstract

In the Yom Kippur War in 1973, the images of the vaunted Israel Defence Forces (IDF) Israeli tanks burning in the Sinai desert shocked the world. Some experts predicted the obituary of tanks and their obsolescence. The initial images of the Russia-Ukraine conflict numerous photographs of destroyed tanks on the roads further reinforced the prediction. Over the past decade, some commentators on military matters have expressed the opinion that tanks won't be an important player in future wars. But the wars in Gaza and Ukraine have highlighted how important armour is despite all its shortcomings. This article carries out an analysis of the strategic and tactical relevance of armoured units in contemporary warfare.

Introduction

There are numerous images of Israeli Merkava tanks in the Gaza War. In fact, tanks have been part of all stages of the conflict, from the initial Hamas attacks where images were shown of tanks which had been hit, which were not battle-ready as the muzzle covers were still on their main guns, to the amassing of tanks at the border and thereafter at the forefront of the invasion. What is, of course, out of the purview of this article is the question of whether it is right to use tanks in a hybrid conflict against innocent civilians where they have the potential to cause unprecedented damage. Lieutenant Colonel Golan Vach, speaking on reclaiming the agricultural community of Kibbutz Kfar Aza said, "This destruction is due

to the attack by our tanks. Since these houses were seized by Hamas, we had to reclaim the entire settlement. It wouldn't have been possible without tanks.”¹ In the Israeli context, tanks have also been used in Lebanon and NATO has used tanks and combat vehicles in Iraq during hybrid conflicts. In the Indian context, tanks were used in Operation Bluestar which was an internal situation. Hence, the focus of this article is the relevance of tanks and the lessons learnt.

During the Yom Kippur War in 1973, the images of vaunted Israeli tanks burning in the Sinai desert shocked the world. Some experts predicted the obituary of tanks and their obsolescence. The initial images of the Russia-Ukraine conflict where numerous photographs of destroyed tanks on the roads further reinforced the prediction.² Tanks have always been the mainstay of any land warfare since World War I. The way they dominated battlefields gave them the acronym: ‘The King of battlefield.’ However, over the past decade, some commentators on military matters have expressed the opinion that tanks won't be an important player in future wars. But in spite of its flaws, the wars in Gaza and Ukraine have highlighted how important armour is despite all its shortcomings.

Questions About the Effectiveness of Israeli Tanks

Footage of a small, dumb bomb-equipped Hamas drone setting a \$4 million Merkava on fire on 07 October 2023, once again raised questions about the effectiveness of Main Battle Tanks.³ Have loitering munitions and cheaper drones made tanks more vulnerable or did Israeli tanks suffer because of tactical rather than technical errors? “Some tanks were not combat-ready because crews were on vacation”, Israeli military historian and blogger Oleg Granovsky told Business Insider. “On some tanks, the machine guns were removed from the roof of the turret to prevent them being stolen.”⁴

Looking back at 1973, it wasn't Israel's tanks but its tactics which caused tank losses. Confident from their 1967 triumph, they sent their tanks on solo attacks against the Egyptian infantry, who were well-prepared with RPG-7 anti-tank rockets and Soviet-made AT-3 Sagger wire-guided anti-tank missiles. Once Israeli armour teamed up with infantry and artillery to conduct combined-arms operations, tanks again became the IDF's decisive instrument. Nonetheless, the Israeli Armoured Corps was profoundly shaken by the Yom Kippur War.⁵

In 1970 Israel began the development of its tank after Britain and France imposed an arms embargo on it following the 1967 war, under the leadership of General Israel Tal, a legend in tank warfare. Foremost among Tal's goals

was incorporating the IDF's emphasis on preserving its soldiers and he was adamant that any Israeli design would have the crew's personal protection as a paramount objective.⁶ The result was the Merkava—Hebrew for “chariot”—a tank unlike any other which entered service in 1979. The engine is in the front, which adds a layer of protection to the part of the tank most likely to be hit. The rear has a ramp to an armoured compartment that can be used to evacuate casualties and allows the tank to be resupplied with ammunition while in combat. It can even carry up to ten (*albeit*, extremely cramped) infantry in the back.⁷

Today with the integration of Rafael's Trophy Active Protection System, the IDF's tanks were able to punch through Hamas lines of defence and anti-tank ambush positions embedded in urban built-up regions, and even use 'The Active Protection Systems' radar to help locate enemy positions and share them on Elbit's Torch 750 system, which provides real-time locations of enemy and friendly forces to Commanders.⁸ This advanced technology provides essential protection against a variety of ATGMs, a threat that has historically posed significant challenges to armour.

Tanks at the Forefront in Gaza

Hamas has a collection of portable anti-tank weapons, including Kornets, Sagger knockoffs, RPG-7s and SPG-9 recoilless rifles. It has also produced a guide to destroying tanks, which suggests overwhelming the Trophy system by firing rockets at close range before the APS can react, among other tactics.⁹

The distribution of battlefield footage being selective, making it difficult to understand how tanks and anti-tank weapons are balanced. While Hamas videos purport to show explosions on or around Israeli tanks, it is unclear if those explosions are related to Trophy interceptions or the destruction of Israeli vehicles. Israeli videos appear to show the Trophy system successfully intercepting anti-tank missiles. Ultimately, the utility of tanks in combat depends on how they are used, how well trained their crews are to use them, and how capable their adversaries are to defend against them.¹⁰

Israel is conducting FIBUA, or Fighting in Built-Up Areas. But the name belies the danger—and terror—of these operations. The fundamentals of urban combat

Today with the integration of Rafael's Trophy Active Protection System, the IDF's tanks were able to punch through Hamas lines of defence and anti-tank ambush positions embedded in urban built-up regions.

The high performance of Israeli armour—Merkava 4 tanks—despite coming under over an estimated one thousand anti-tank missile attacks in Gaza since the start of the ground offensive on 30 October, has essentially laid to rest premature claims about the irrelevance of the main battle tank in 21st-century warfare.

for tanks haven't really changed. The tank is a formidable weapon. But when you're inside one it is impossible to see enough and adequately, to get your bearings when you have the turret hatches closed down. All you have are the periscopes around the Commander's cupola ring, and the constrained image from the gunner's sight.¹¹ As the RPGs (Rocket Propelled Grenades) and anti-tank weapons strike into the side of the tank, the turret swings around to find who is firing. It quickly becomes discombobulating—not least

when, in your earpiece you have the Combat Group radio network blaring, and the other members of your crew communicating, with often the presser switch often being pressed in the wrong direction!

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It is also noteworthy that the Merkava 4 tanks were promptly outfitted with a steel protective layer over the hatch in response to Hamas's use of quadcopters to attack border patrol tanks on 07 October 2023 by dropping explosives and grenades. As a result, the war not only showcased the adaptability of Armoured units in urban settings but also severely undermined the perception of tanks being obsolete, a view that gained traction following the challenges faced by armour in the Ukraine War. Gaza has demonstrated the centrality of tanks in modern warfare, as effective ground battle trailblazers in urban Middle Eastern battlefields, with global ramifications for the future of armed conflict.¹³

Pergolas of the Tanks

The so-called “cope cages”, hastily constructed metal armour, intended to detonate anti-tank charges before they come into contact with the tank itself, have been spotted mounted on Israeli tanks. The cage, which resembles a pergola perched on top of a tank turret, was first spotted on Russian Army tanks shortly before the 2022 invasion of Ukraine. In Israel's case, however, the Israeli Army

isn't so much worried about missiles like the American Javelin as it is of a \$300 drone dropping an RPG warhead.¹⁴

The armour, consisting of rows of metal bars supported by four metal posts, was seen on Merkava Mk 4s. Crew members can still see through the armour to the ceiling thanks to the bars' spacing. The armour is a likely response to an attack on a Merkava tank early in the war. In the case of the 07 October incident, the warhead was dropped on an unsuspecting Merkava 4. The round appears to have missed the tank's 120-millimeter main gun barrel, and instead landed on the flat (likely thin) armour above the tank's engine compartment. Moments later, the front right side of the tank, where the engine exhaust is located, was burning indicating an engine fire.

Israeli cope cages are more narrowly focused on the drone threat. They are also taller than Russian cope cages, likely with the intention of allowing the molten jet charge of a High Explosive Anti-Tank (HEAT) round to fizzle out before it can touch the turret. These cages have proven useful in forcing anti-tank weapon to detonate prior to vehicle penetration or in disabling Ukrainian anti-tank weapon fuses before they contact a vehicle's main armour. Russia's tanks and trucks now have more physical defense thanks to the cage combination, and the crews of these vehicles seem more comfortable operating in areas where drone or loitering munition attacks could be a threat.¹⁵

Israeli Active Protection System

Merkava 4 tanks are already equipped with the Trophy Active Protection System, a combination of millimetre-wave radar sensors and an automatic interceptor designed to destroy incoming rockets and missiles before they can reach the tank. On the whole, the usage of tanks and the Trophy system in Gaza stands in stark contrast to the experiences of armour in Ukraine, where Russian tanks have often been severely vulnerable to ATGMs and other anti-armour weapons.¹⁶

Importance of Repairs

In an interview, Major Tal, who is part of an Armoured Workshop, said, "Our work here is to make sure the tanks continue to win." He went on to state that: "The tanks are equipped with the latest Trophy System (called 'Windbreaker in IDF terminology). This system which has been around for more than a decade, is also used by US tanks. This war is a test for the system because the war is long and hard, and the enemy is well armed. The system is functioning as expected."

Tanks are coming lesser within kinetic firing range of each other, and are being attacked at much longer ranges. New gun munitions adapted to the new forms of warfare, as well as the adjustment of the tank's gun to launch guided missiles, are merely intermediate solutions that bypass the question of what the current utility of the heavy kinetic gun itself is.

Damaged tanks or those in need of repairs are being turned around quickly to go back into battle. He said that usually they can get a tank back into action within 24 hours. Amongst the parts that need repairs, the tank treads are one of the main issues. As per reports most of the tanks and APCs damaged at the beginning of the attack were quickly repaired and returned to the front lines. In addition, new vehicles including tanks, Eitan APCs, and Namers are being produced at a much faster rate.¹⁷

RMA and Tank Design

Since the outbreak of war in Ukraine particularly, much has been talked about the new technologies that have revolutionized warfare: drones of all types and sizes—armed, loitering, and self-destructing; AI and big data; cyber; automation and robotics. Some call the changes we are living through today a fourth industrial revolution, but all the changes are products of the same fundamental technology that has advanced since the middle of the 20th century: the exponential growth in electronic computational power.

The medium in which land warfare takes place is immeasurably more complex than those of sea and air warfare, because of both the numbers of combatants involved and land's complex topographical features. But the revolution that land warfare is undergoing is no less profound and far reaching than that generated by the mechanisation revolution and the introduction of the tanks and other AFVs. Technology has brought about a change in the three important aspects: lethality, firepower and protection of a tank.¹⁸

Tanks are coming lesser within kinetic firing range of each other, and are being attacked at much longer ranges. New gun munitions adapted to the new forms of warfare, as well as the adjustment of the tank's gun to launch guided missiles, are merely intermediate solutions that bypass the question of what the current utility of the heavy kinetic gun itself is. The tank's heavy armour has similarly reached the limits of its ability to withstand precision, tandem hollow-charge, fire-and-forget munitions, which target the tank's top. The destruction of the Armenian tanks in the 2020 war against Azerbaijan, the stranded and

harassed Russian convoy enroute to Kiev and the image of the Russian Armoured Battalion massacred during its attempted river crossing in the Donbas, with the shattered bridge in the middle, starkly demonstrates the current reality.¹⁹

Active defence means electronic detection, disruption, and interception of incoming projectiles, launched from land or from the. Electronic systems designed to disrupt and down unmanned aerial vehicles and drones—those that launch munitions and kamikaze drones, either individually or in a swarm—are also in advanced stages of development. That is the future.²⁰

Tanks in Urban Warfare in the Indian Context

Seeing how combat has evolved in the 21st Century, many experts anticipate that urban battlefields will be widespread in the future. Urban combat in different forms has been visible both in Gaza and Ukraine. In our context too, with the proliferation of small towns along the border and the increasing size of villages the terrain from Jammu to Anupgarh, we will witness our own mechanised forces fighting through urban areas.

Urban areas present unique and complex challenges to the armoured forces. The ability of a tank to destroy targets at extended ranges is often forfeited and negated. Shorter engagement ranges provide enemy forces, including hybrid actors, advantages in using low tech anti-tank weapon systems which have low effective ranges, with impunity.

The built-up area across our Western Borders highlights the challenges for tanks and armour operating in the area. The vulnerability to hybrid elements with anti-tank weapons as well as reduced space for classical manoeuvre has posed huge challenges that Combat Teams and Groups have to face. Reduced frontages and ranges coupled with sub-optimal surveillance capabilities and increased vulnerabilities make it a challenging environment for tank Commanders to operate in.

There are many experts who compare the areas of Ukraine and Gaza to the plains of Pakistan Punjab due to the characteristics of built-up areas and natural obstacles. Though there are similarities, however, there are vast differences in terms of sizes and types of towns and cities, terrain, and aims of the forces being employed by both sides. Barring a few, the cities and towns are far smaller and less densely populated than Gaza. Therefore, the employment of the tanks is similar yet vastly different.

The operating philosophy in urban areas and these areas will require smaller agile combined arms groupings operating together. The use of technologies

like swarm drones for detection, speedy obstacle crossing expedients as well as change in tactics and procedures need to be adopted to reduce tank vulnerabilities. There is no doubt that tanks need to be grouped with adequate surveillance resources as well as infantry elements in a combined grouping to be able to achieve speed and tempo of operations in built-up areas. Changes in tactics and procedures to be adopted by tank commanders are the need of the hour to operate successfully in the urban terrain.

The Future

The war in Ukraine provided a partial view into the future. While we still lack clear information, the Ukrainian counteroffensive experienced difficulties similar to those experienced previously by the mechanised Russian forces, as the modern tanks and infantry fighting vehicles supplied to Ukraine by the West lacked active defence systems. Despite their heavy armour and great sophistication, they were as vulnerable to modern electronically guided munitions as the Russians had been. While electronically guided projectiles are already widely and effectively used in the Ukraine War, electronic interception and disruption systems are largely absent.²¹

There will probably be even more far-reaching effects on fighting vehicle design. Currently found as an add-on to heavily armoured combat vehicles, active defense systems are meant to eventually replace heavy armour. Current fighting vehicles installed with active defence systems combine two eras—the old and the new. This is true for the latest models of the American Abrams, German Leopard, British Challenger, and Israeli Merkava alike.

Indeed, relying on electronic detection and interception systems enables a drastic reduction in the armour of fighting vehicles for what is necessary against small arms, shrapnel, and blasts. Thus, there is an expected reduction in their weight from about 10 to 25 tons; a parallel reduction in engine size and weight; and design re-orientation to electronically guided defensive and offensive systems. This is the direction in which land warfare and land weapon systems are heading in the electronic-computerised age in urban combat where tanks are engaged in a hybrid war.

The IDF is a pioneer in this field, as one can glean from open-source information regarding the futuristic Carmel tank. With its light armour, it is not armed with a single big cannon designed to take out tanks; rather, it has missiles and a light-calibre automatic gun. It is enveloped entirely by electronically

guided systems—offensive and defensive—and it is the future of tanks and armoured fighting vehicles.²²

The significance of this revolution in terms of the structure of units and battle formations is no less far-reaching. Here, too, open sources indicate that the IDF has already made extensive changes: the number of tanks has been drastically reduced, innovative electronics have been introduced, efforts are underway to increase cooperation between the various arms and “dimensions”, and the Army has formed, on an experimental and semi-experimental basis, integrated combat units for “multidimensional” combat, in order to examine ground-breaking troop structure, weapon systems, and military doctrines.

Conclusion

The high performance of Israeli tanks despite coming under thousands of anti-tank missile attacks in Gaza since the start of the ground offensive has essentially laid to rest premature claims about the irrelevance of the main battle tank in 21st-century warfare.²³ IDF's experience shows tanks can still play a crucial role in modern combat scenarios, even in the most challenging urban environments. Moreover, the IDF's strategy in deploying tanks in Gaza reflects a broader military approach that emphasizes the integration of various capabilities. Its continuing critical battlefield role has been acknowledged in yet another conflict, albeit in a hybrid conflict. While tanks play a pivotal role, their success is also dependent on the coordinated efforts of the air, intelligence, and ground forces. This holistic approach to warfare is indicative of the evolving nature of military strategy, where synergy across different platforms and units is key to achieving operational objectives. Operation 'Swords of Iron' launched by Israel against Hamas, has demonstrated that tanks, when combined with advanced defensive technologies, can effectively navigate the complexities of modern battlefields. The conflict has re-established the strategic and tactical relevance of armoured units in contemporary warfare. But combat experience and lessons learnt prove that the enemy has a major role to play in tank design and development and there is no doubt that the tank needs to adapt.

The IDF is a pioneer in this field, as one can glean from open-source information regarding the futuristic Carmel tank. With its light armour, it is not armed with a single big cannon designed to take out tanks; rather, it has missiles and a light-calibre automatic gun.

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Use of Rockets and Missiles in Recent Conflicts

PR SHANKAR

Abstract

Unmanned drones of various kinds, including the armed and unarmed variety, have revolutionised the battlefield. Significantly, even more than drones, it is the proliferation in the use of rockets and missiles of different varieties which has impacted not only the battlefield but also geostrategic statecraft in a major way. This article examines how and why this has happened by analysing how rockets and missiles are being increasingly used as geopolitical tools of coercion. It then goes over how rockets and missiles have been used in conventional battles in the past as well as the present. Lastly, it studies the increasing use of rockets and missiles by non-state actors as their preferred tool of power. Alongside that, it will also be relevant to examine as to why this has happened.

Introduction

God fights on the side of the big guns and firepower often makes the difference in outcomes during battle. Traditionally, delivery of firepower has largely been the preserve of tube artillery and aircraft during conflicts. However, that has changed drastically in recent times. Unmanned drones of various kinds, including the armed and unarmed variety, have revolutionised the battlefield. Significantly, even more than drones, it is the proliferation in the use of rockets and missiles of different varieties which have impacted not only the battle

field but also geostrategic statecraft in a major way. Their widespread employment has largely gone unnoticed and is often understated. While the global inventory of rockets and missiles has been expanding progressively, the visibility factor rose when Nancy Pelosi visited Taiwan and China responded with missile drills. The heightened use of rockets and missiles has been evident in all conflict situations thereafter. It is now marked by the widening conflict in West Asia. It would be, therefore, pertinent to examine how rockets and missiles have impacted the battle fields in recent conflicts from three perspectives. Firstly, how rockets and missiles have been used as geopolitical tools of coercion. Secondly, use of rockets and missiles in conventional battles. Thirdly, increasing use of rockets and missiles by non-state actors as their preferred tool of power. Alongside that, it will also be relevant to examine as to why this has happened.

Unmanned drones of various kinds, including the armed and unarmed variety, have revolutionised the battlefield. Significantly, even more than drones, it is the proliferation in the use of rockets and missiles of different varieties which have impacted not only the battle field but also geostrategic statecraft in a major way.

Rockets and Missiles: The Geopolitical Tools of Coercion

North Korea. If there is one country which has perfected the use of missiles and rockets to make a geopolitical statement, it is North Korea. It has been a pioneer in the geostrategic use of rockets and missiles through a series of provocative testing-cum-demonstrative firing. North Korea has a long history of geopolitically-motivated rocket and missile tests dating back to the late 70s.¹

As recently as January 2024², North Korea fired several cruise missiles off its east coast and also tested an intermediate-range ballistic missile with hypersonic glide capability which can reach the USA. This was the latest in its continuous series of rocket and missile tests which it has been carrying out to threaten the United States, South Korea and Japan almost routinely.³ Initially, when its missiles had high failure rates of up to 50 percent, the North Korean threat was not perceived to be great. In the 90s and the first decade of this century the failure rates started dropping. When they were around 25 percent, alarm bells started ringing. In recent times their failure rates have dropped further to roughly 15 percent. As a result of the vastly-improved reliability of its missiles, the threat posed to North Korea's adversaries has gone up. The probability of any maverick

action has also increased manifold. Tests and firing by North Korea have been a mix of firing of unguided rockets, guided missiles and cruise missiles of varying ranges and variety. These tests and firings have kept the Eastern Pacific area constantly destabilised. North Korea also conveys nuclear ambiguity to Japan, South Korea and the USA through its testing. It has also been firing on either side of the Korean peninsula close to inhabited areas, often using conventional rockets mixed with tube artillery. These firings are to explicitly threaten South Korea whenever there is a military or political development which North Korea perceives as a threat to itself. Overall, North Korea uses its missile and rocket arsenal as a clear political weapon of coercion.

China. It is no secret that China has developed a vast array of missiles and rockets as part of its military modernisation.⁴ China's People's Liberation Army Rocket Force (PLARF) is now a strong and modern rocket-cum-missile force. It is the largest ground-based missile force on earth. For a very long time, all this was kept largely under wraps and out of focus. When Nancy Pelosi, the then speaker of the USA, visited Taiwan in August 2022⁵ it raised China's hackles and a crisis erupted in the Taiwan Straits. After her visit, China cordoned off Taiwan and launched large-scale military exercises. A centrepiece of all these exercises was the use of rockets and missiles in a visibly demonstrative manner to convey China's intent to escalate matters if its laid-down redlines were crossed. Such exercises have been carried out repeatedly thereafter. By carrying out numerous such rocket and missile firings demonstratively, China has been conveying an explicit political message that it will not hesitate to teach Taiwan a lesson. The larger message to the international community was to demonstrate China's resolve and capability to fight and win wars, counter an intervention by a third party, stand up against a strong enemy, and project power globally. As the China analyst, Amrita Jash, quoting the Chinese Defence White Paper 2019 states, China uses the PLARF to enhance its "credible and reliable capabilities of nuclear deterrence and counterattack, strengthening intermediate and long-range precision strike forces, and enhancing strategic counter-balance capability."⁶ This is a potent threat to China's neighbours. It also gives the PLA the ability to influence local, regional, and global military conflicts. After the Nancy Pelosi incident, the Chinese Rocket and Missile Forces have come into the limelight and countries are now aware of what China can or cannot do. A new dimension has been added to China's capability of military coercion which straddles a large swathe of the conflict spectrum from the sub-tactical to the geostrategic.

Rockets and Missiles in Conventional Battles

Armenia-Azerbaijan Conflict. The 44-day Armenia and Azerbaijan conflict has been a precursor to the way how modern conventional wars will be fought using an array of rockets, missiles, drones, and artillery.⁷ The highlight of the conflict was the extensive use of drones of Russian, Turkish, Israeli, and indigenous designs to perform reconnaissance and strike missions to support and complement conventional artillery. The conflict over the disputed Nagorno-Karabakh region also featured the heavy use of missiles and rocket artillery. This aspect has largely gone unnoticed. Both sides employed and deployed a range of rockets and missiles. These were a combination of legacy systems of the USSR era as well as modern systems procured from different sources individually. Both sides deployed the older Soviet-era BM 30 Smerch, Scud and Tochka missiles as also newer and more advanced Iskander and the Israeli-made LORA (Long Range Attack) missiles. Armenia also used Chinese multiple-launch rocket systems. However, Azerbaijan invested more into its rocket and missile arsenal to include guided rockets and MLRS systems procured from Turkey and Belarus. These gave it the ability to engage targets up to 120kms and 200kms in depth. When seen objectively, the balance tipped in Azerbaijan's favour due to its possession of better drones and rocket artillery and its willingness to use them in an innovative and integrated manner. Many concepts used in this war have been adopted and taken to greater levels of imagination in the Russia-Ukraine war.

Russia-Ukraine War. While North Korea and China have been using rockets and missiles provocatively as a means of geopolitical coercion, the Russia-Ukraine war has seen the kinetic use of these weapons very extravagantly for varied effects in a conventional war. Prior to this war, it was being postulated that the nature of war had changed and conflicts would be largely fought in domains that were non-kinetic. It was also felt that the Armenia-Azerbaijan conflict was an exception and not what a real conflict would be. However, the Russia-Ukraine war trashed such theories altogether. In fact, the full force and violence of kinetic action and its centrality in battle were brought back to the table during this war. In this 'back to the future scenario', the use of long-range vectors by both sides has been imaginative and extensive. Till this war, it was understood that God fought on the side with big guns, as mentioned earlier. However, this war proved that God fights on the side with big guns, rockets and missiles with longer ranges.⁸ Employment of guns, rockets and, missiles—guided, cruise and hypersonic has been unrestricted during the Russia-Ukraine war. It continues to

Terrain, ground, weather and all other factors deter, inhibit or preclude the employment of Air, Infantry and Armour but very little deters long-range Artillery.

date. Many factors have emerged during this conflict that has now gone on for more than two years. Terrain, ground, weather and all other factors deter, inhibit or preclude the employment of Air, Infantry and Armour but very little deters long-range Artillery.

In this war, after the initial flurry, the front lines have remained largely static and have only changed incrementally with each action. The daily situation has been changing due to orchestrated firepower strikes which were carried out all over the length and breadth of Ukraine. Both sides have used long-range vectors to open up the battlefield and generate strategic as well as battlefield manoeuvres. Long range firepower has been used to overcome terrain friction to enable in-depth strikes. A striking aspect of this war has been that rockets and missiles have been used to achieve political aims in a very deliberate manner through firing on specified targets, in an explicit manner. Russia fired rockets and cruise missiles with conventional warheads in a destructive role and postured with nuclear warheads. It achieved deterrence using a combination of nuclear and conventional warheads simultaneously and interchangeably. Russia conveyed the credibility of its intent and its willingness to escalate through the extensive use of air, hypersonic/cruise/guided missiles, rockets, and guns. It deterred NATO from getting directly involved in this war. Ukraine's imaginative use of rockets and cruise missiles to deliver crucial blows to Russia to impose caution on the latter is noteworthy. The sinking of the Russian cruiser Moskova on 22 April 2022 was one such example.⁹ Another noteworthy feature of this war was that even at tactical levels, rockets and missiles have been used innovatively in executing 'firepower ambushes', undertaking 'track and kill' operations and carrying out 'spoiling attacks. A major factor which has emerged is that rockets and missiles used in conjunction with drones of various kinds open up battle spaces and increase the arcs of conflict significantly.

Rockets and Missiles: The Non-State Tool of Power

Houthis. The Houthi movement to grab power from the recognised government in Yemen is decades old. However, when the Saudis intervened in Yemen to back the recognised government, Iran stepped in to support the Houthi rebels. That support came in the form of a liberal supply of rockets and missiles of all varieties. The proxy involvement of Saudi Arabia and Iran turned the civil war in Yemen into an armed conflict of multiple proportions—local, regional and

international. A major aspect of this conflict is that it marks the rise of extensive use of rockets and ballistic missiles by nonstate actors/proxies in conflict. Iran-backed Houthi rebels have fired innumerable rockets and missiles at Yemen's Government and Saudi bases, population centres, and infrastructure to trigger a humanitarian crisis. That is the local part. Regionally, Houthis have used a combination of cruise missiles, unguided rockets, ballistic missiles and armed unmanned aerial vehicles (UAVs) to attack economic targets in Saudi Arabia. The most spectacular of these have been the attacks on the Aramco oil refineries at Abqaiq and Khurais in 2019.¹⁰ The Houthis have also proven that they have effective surface-to-air missile capability by downing several aircrafts of the Saudi coalition forces. All this led to the Houthis securing a power-sharing agreement in the crippled country. Most of this has been due to their rocket and missile arsenal. The CSIS report on 'The Missile War in Yemen' chronicles the extensive use of missiles in the conflict.¹¹ Recently, the Houthis have come back into the global spotlight by firing drones and anti-ship cruise missiles against international shipping and oil tankers in the Red Sea in the Bab El Mandab area in support of Hamas and against Israel in Gaza. They have also been engaging U.S. Navy warships in the Red Sea. Possession and use of long-range missiles and drones by Houthis has long-term implications of conflict escalation in West Asia. It has already complicated the prospect of restoring peace and stability in the region or normalising international trade. On the other hand, the Houthi missile activity is widening the conflict and is pulling the United States into direct conflict with Iran. If that happens, we are actually staring at a World War III scenario.

Hezbollah. The Hezbollah in Lebanon has been termed as the world's most heavily armed non-state actor.¹² It has been described as "a militia trained like an army and equipped like a state."¹³ Hezbollah has been fully backed by Iran. The major portion of its war-like equipment is its rocket and missile arsenal which is arrayed against Israel. Hezbollah's missile inventory is mostly of small, man-portable and unguided surface-to-surface artillery rockets. These devices lack precision or lethality by most accounts. However, their expanding numbers and volume of fire convert them into highly potent weapons of terror. In the 2006 Lebanon war, they were estimated to have held around 15,000 rockets and missiles of which, they fired nearly 4,000 at Israel during the month-long conflict. However, since then Hezbollah expanded its rocket arsenal. Today it is estimated to be between 130,000-150,000.¹⁴ Hezbollah uses these rockets as tools of terror and deterrence. Its tactics are simple— 'shoot and scoot'. It fires

Hamas has borrowed and adapted ideas from the Houthis and Hezbollah and has also received assistance from Iran as per multiple sources. They have also learnt to make crude rockets using water pipes and filling them with any available explosive indigenously.

rockets indiscriminately from small, mobile and transportable launchers without any pattern. This makes detection, suppression and retaliation extremely difficult. It also negates the use of airpower by Israel and forces it to commit troops on the ground. As a result, Hezbollah and Israeli troops are placed on equal footing in battle. Here the advantage has been with Hezbollah which fights from behind a civilian façade like all non-state actors do. As per Saudi and UAE officials, Hezbollah and Houthi forces are

collaborating in the development and employment of rockets and missiles. It has also been reported that Hezbollah is pushing to acquire longer-range precision-guided munitions. Hezbollah has some rockets and missiles which can even range up to 250 km. All this can only be feasible if missile technology is being proliferated to them by Iran. The entire sequence of events is dangerous, to say the least.

Hamas. Hamas and other militias in the Gaza Strip were estimated to possess around 10,000 rockets including long-range missiles. Hamas had in its control 6,000 of these rockets. These rockets are a mix of short-range (15-20 km), Medium-range (up to 45 km), and long-range (100-200 km) rockets, which are mostly unguided. Hamas has borrowed and adapted ideas from the Houthis and Hezbollah and has also received assistance from Iran as per multiple sources. They have also learnt to make crude rockets using water pipes and filling them with any available explosive indigenously. While most of these are erratic and wayward, they serve the purpose of striking terror and making defiant political statements. Hamas uses civilian infrastructure to store and hide these weapons and also embeds its weapons arsenal and command centres.¹⁵ Hamas fires these rockets into Israel from civilian areas of the Gaza Strip. They have been doing it successfully to demonstrate their intent and power to retaliate to any provocation by Israel or even to needle it in pursuit of their aims. These have also been used by Hamas to provoke Israel into indiscriminate retaliatory action and enmesh it in a humanitarian trap.

Role of Iran. Iran, with its vast array of rockets and missiles,¹⁶ serves as a crucial source of proliferation of rockets and missiles and their technology for most of the nonstate actors in West Asia. In the case of longer-range and

advanced missile systems, Iran, in all probability, is supplying them to most of the non-state actors in a calibrated manner to project power and gain recognition of being an important player in the region. The evidence that it is doing so comes from missile debris, naval interdictions, and seized equipment bearing Iranian manufacturing labels.¹⁷ Iran's role gives it adequate control over all the non-state actors in the region. In turn, such control enables Iran to project power far beyond its borders even if does not have a strong navy or Air Force.

Conclusion

In the past two decades, rockets and missiles of various categories have become the preferred choice of tool of power, coercion and terror for state as well as non-state actors. The enhanced ranges of these systems outpace those of conventional artillery or aircraft. When combined with the surveillance capability of drones, they expand the battlefield and put every corner of an adversarial nation/territory at threat. They open up a new vista of non-contact warfare with escalatory controls well in hand. They are also far cheaper and far less complicated than air forces to acquire and maintain. They are flexible in employment with very little required in terms of training and infrastructure. The variety and array of rockets and missiles are vast and can be produced through crude and rustic methods as well as sophisticated processes as needed. Rockets and missiles are highly suitable for both regular and irregular forces. They can be used as weapons of terror and mass destruction very freely. Their visual impact is high which enhances propaganda value immensely. They are capable of precision over longer ranges, unlike guns. Their survivability against air defences is far higher than aircraft. Very importantly they are suitable for a variety of purposes including conventional and nuclear. Another factor which comes into play is that technology gives better options for producing and employing rockets and missiles almost on a daily basis. Modern missiles with higher speeds, range, navigation, advanced materials, and endurance lend themselves to dual-use rockets. The evolution of hypersonic missiles is a new chapter which is being opened up on the horizon.¹⁸ The use of rockets and missiles in any conflict situation is only set to grow in modern warfare. Their role has gone far beyond the destruction of targets in conventional modes. The trend is to use these weapons for political purposes and coercion—nuclear as also conventional. These have found favour immensely with irregular non-state actors who see them as an alternative to air forces. As technology progresses, it

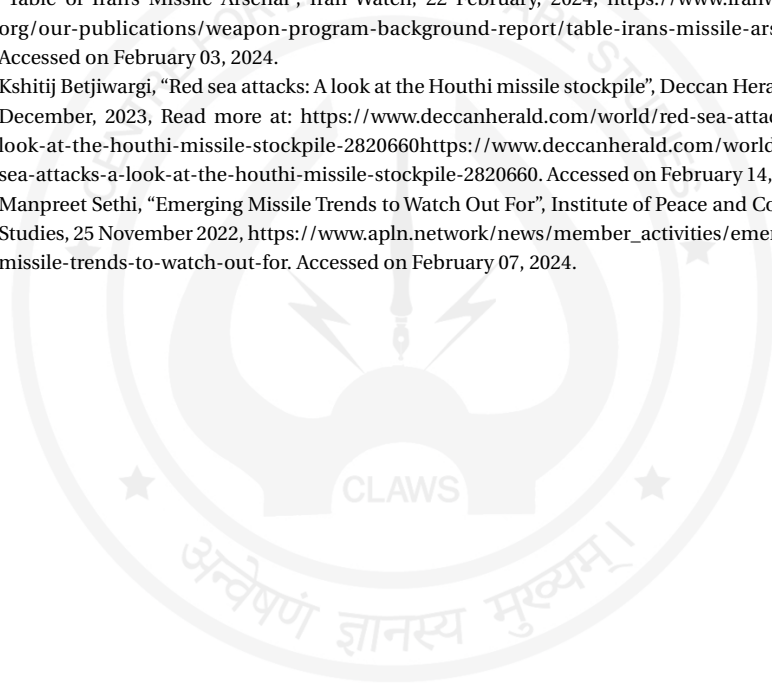
is almost certain that every actor in any future conflict will increasingly resort to the use of these systems.

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Offensive Operations in Urban Terrain: Lessons from Ukraine and Gaza

PRABDEEP SINGH BEHL

Abstract

The article discusses the recent conflicts in Ukraine and Gaza and how they have shifted the war-fighting paradigm to new dimensions. The success or failure of offensive operations in these conflicts is being weighed by the defence and fall of urban centres. The article highlights fundamental lessons that emerge from these wars that must be incorporated into doctrine while conducting offensive operations in urban terrain. The war in Ukraine is traditional with a mix of hybrid and conventional war and fought under the threat of the use of nuclear weapons, while the one in Gaza is hybrid with a focus on guerrilla warfare in densely-populated urban terrain. Ultimately, the article questions how much and to what degree of urban warfare the Indian Armed forces have visualised themselves to be engaged in, in the future and whether the war-fighting doctrine needs re-configuration in light of the lessons learnt from these two conflicts.

Introduction

The 'Special Military Operation' (SMO) unleashed by Russia on Ukraine on 24 February 2022, and the War in Gaza after the Hamas' attack on Israel on 07 October 2023 have shifted the war-fighting paradigm to new dimensions.

Victory in battle, today, is being weighed by the defence and fall of urban centres in these two different territories—one in Eastern Europe and the other in heartland Middle East. The war in Ukraine is strange,¹ in Ukraine, it is conventional with a mix of hybrid, and fought under the threat of the use of nuclear weapons with the fighting

spread over hundreds of kilometres. On the other hand, the one in Gaza is hybrid,² with a focus on guerrilla warfare, by Hamas terrorists, in densely-populated urban terrain, which is being countered with the use of destructive power by Israel. Both these conflicts have common offensive aspects—heavy reliance on artillery, drones, aircraft, missiles and rockets, with resultant destruction of property and human displacement. Such war-fighting ‘meat grinding’ methodology,³ the destruction caused and the prolonged period of war can be compared to that which followed World War I and II.

In the Indian context, our war-fighting doctrine has always envisaged ‘short and swift wars’, which today has become questionable in light of the happenings in Ukraine and Gaza, which was also expressed by General Manoj Pande, the current Chief of the Indian Army.⁴ How much and to what degree of urban warfare are the Indian armed forces visualising themselves to be engaged in? Should we re-configure the war-fighting doctrine in light of these two conflicts? While these aspects are best discussed behind closed doors of the war rooms, an attempt is being made in this paper to highlight certain fundamental lessons which emerge because of these wars and must be incorporated into our doctrine while conducting offensive operations in urban terrain.

Peculiarities of These Wars

The conflict in Ukraine is marked by its strategic importance, ethnic divides, and significant international involvement. Ukraine’s control over vital transportation routes and its cultural divide between Russian-speaking eastern regions and Ukrainian-speaking western regions heightens the complexity of the conflict. Despite extensive support from Western nations, the conflict has persisted since 2014 without resolution, resulting in a devastating human toll and widespread displacement of civilians.

After two years of protracted war fighting, Russia controls nearly 18 percent of Ukrainian territory⁵ and the end of the war is not in sight. Ukraine, which is

Urban warfare historically results in heavy casualties and immense destruction, even with technological superiority.

supported by 50-plus countries,⁶ including 31 NATO countries, is fighting against Putin's Russia, intending to defeat Russia with all that it takes. Two years have passed and they have been unable to achieve their aims, despite receiving over 90 billion euros in military aid.⁷ Resultant combined casualties on both sides are estimated to be 500,000 as of August 2023.⁸

The war aims of both sides remain unattained; both sides in Ukraine are unwilling to be the first to take any steps towards a ceasefire and reconciliation. The support for Ukraine has dwindled over the past few months as the question often asked is that for how long will the West, EU and NATO countries continue to support the war? Russia, on the other hand, has been able to survive all sanctions, and as per IMF estimates the GDP is projected to grow by 2.6 percent in 2024.⁹ It is pertinent to state that Russia has always been preparing to fight the West since the USSR era. However, of late, Russia too, has faced a shortages, such as that of 122 mm ammunition, which is now being supplied by North Korea. It also relies on Iran for its Shahed-136 Kamikaze Drones¹⁰ which Russia has employed extensively in this war.

The fight in Ukraine has been limited to major Urban Centres—Bakhmut, Mariupol, Kharkiv and Kherson and Avdiivka. The battle of Bakhmut has been described as a “meat grinder” and a “vortex” between the Russian and the Ukrainian armed forces that began on 17 May 22 and continued till May of 2023.¹¹ This battle was remarked by some as the fiercest urban combat, not seen in Europe since World War II, with comparisons made to the battle of Stalingrad. On 21 May 2023, Ukrainian President Volodymyr Zelensky compared the battle and the destruction of the city to that of the atomic bombing of Hiroshima in 1945.¹²

Urban warfare historically results in heavy casualties and immense destruction, even with technological superiority. Examples include Hue in Vietnam, Vukovar in Croatia, Sarajevo in Bosnia and Herzegovina, Mogadishu in Somalia, Grozny in Chechnya, and Fallujah during Operation Iraqi Freedom. In contrast, the Indo-Pak 1971 War in Bangladesh saw 93,000 Pakistani soldiers surrender to the Indian Army in just 13 days.

The Gaza Strip is one of the most densely populated areas in the world, with 2 million inhabitants in an area as small as 141 square miles. Hamas has created an innovative urban landscape with extensive tunnels, bunkers, and fortifications to fend off Israeli assaults. Fighting against Hamas, a terrorist force using urban

guerrilla tactics, is a formidable task for the Israeli Defence Forces (IDF), as it involves movement of tanks, targeting, clearance of high-rise buildings, and holding on to them post-clearance, requiring significant time and manpower.

It has been recognized that targeting civilian areas, ports, naval assets at sea, and energy-related infrastructure with missiles, including hypersonic missiles, drones, unmanned surface vehicles, and artillery, are considered the modern primary tools of warfare. In the Ukraine War, the importance of air defence has come to the fore like never before in the history of warfare. Although swarming as a concept had emerged in our books, for the first time, drone swarms have proven to be effective against the air defence systems deployed both by Ukraine and Russia.¹³ The effectiveness of the Israeli Iron Dome defence system was also tested by Hamas during the raid on October 7, 2023, rendering the system ineffective through numbers.¹⁴

In the Ukraine war, there has been an overreliance on unmanned systems—the use of low-cost drones against expensive equipment has made their use relevant.

Important Lessons for the Conduct of Offensive Operations

Urban centres are strategically important targets due to their political, economic, and cultural significance. They serve as hubs that, when controlled, provide authority over civilians, disrupt enemy logistics, and secure vital resources. Despite the risks associated with urban conflict, capturing certain areas may become necessary for political and psychological messaging.

Increased Role of Unmanned Systems. In the Ukraine war, there has been an overreliance on unmanned systems—the use of low-cost drones against expensive equipment has made their use relevant. Destruction of Challenger 2 (which costs USD 4.9 million) and Leopard tanks by Russian loitering ZALA Lancet drones (which costs USD 35,000)¹⁵ has proven their cost-effectiveness. Similarly, the use of Unmanned Surface Vehicles by Ukraine in the Black Sea has caused adequate damage to the Russian Black Sea Fleet. The use of aircraft and helicopters has been reduced to firing from stand-off ranges for the fear of being engaged by the effective AD Systems and anti-aircraft missiles. It has been recently reported that the Ukrainian military is setting up an Unmanned Aerial Systems Force exclusively to employ drones in their standoff attacks on the Russian military.¹⁶ These unmanned aerial systems will play a very crucial role in offensive operations and warrant setting up a new corps within the armed forces.

Humanitarian Considerations. The Ukraine War has caused internal displacement of 3.7 million people approximately (as of January 2024) and nearly 6.3 million refugees globally (as of January 2024). As per UNDP, approximately 14.6 million people need humanitarian assistance. Similarly, in Gaza, as per the Office of the United Nations High Commissioner for Human Rights (OHCHR), 1.9 million people out of a population of 2.3 million have been displaced. Management of IDPs and refugees, thus, must be worked out in conjunction with the civilian administration as a part of offensive operations.

Increase in Unethical/Controversial War Time Practices. These two conflicts have demonstrated a total disregard for the UN Geneva Conventions. Targeting of critical infrastructure such as power infrastructure, breaching of dams, threat posed to nuclear installations (such as the Zaporizhzhya Nuclear Power Plant or ZNPP), sabotaging the underground gas pipelines by covert unidentified teams etc., have given way to a no-holds-barred war. This has set such precedence, which must be catered for by war planners in their future war doctrines.

Tunnelling. The intricate layout and network of tunnels in the Gaza Strip came to light during the current Israeli-Gaza conflict. Sealing of the entrances, flooding of the tunnels and the conduct of tunnel warfare is something that has been experienced or envisaged for the first time. Future wars in urban terrain will have to factor these to a larger extent than before. Appropriate technologies and weapon systems will have to be developed for close-quarter battles in these mazes of tunnels, as the defender is likely to utilise them and the sewers for movement, re-supply and communication.

Information Warfare. It is evident from these conflict zones, that building a narrative against the attacker, with efforts to declare the attacking forces as violating human rights and conducting war crimes has become a norm. Social media, such as the telegram channel has been effectively used to manipulate the truth making it difficult to comprehend the true nature of the war on the ground. In future offensives, high-calibre Information Warriors must be employed at the strategic level to portray and counter enemy narratives.

Employment of Strategic Assets. Strategic assets of the respective 'Rocket Forces', including hypersonic missiles, such as the Kinzhal, have proven effective in causing destruction in the depth areas and creating fear and migration of the civilian population. Targeting cities, critical infrastructure and underground infrastructure with precision, based on reliable intelligence has assumed importance. However, these missiles have also been countered, over major population centres, by effective AD umbrellas—such as the US' Patriot Missile

System, the German IRIS-T and Russian S-400s. This, thus, necessitates increasing one's inventory and to factor the launching of a mix of missiles (including hypersonic) and swarms of drones to pierce through such shields.

The use of irregular forces, mercenaries and criminals as part of the main effort has been 'legitimised' in these conflicts.

Employment of Irregular Forces as Force Multipliers. The use of irregular forces, mercenaries and criminals as part of the main effort has been 'legitimised' in these conflicts. The Israeli Defence Forces are at war with a terrorist organisation, Hamas. Similarly, the employment of 50,000-strong Wagner forces under Prigozhin¹⁷ the capture of Bakhmut and other areas has been found effective by Russia. Ukraine, too has used the 'International Legion of Ukraine' to lure and recruit foreigners to fight against Russia. In future wars, offensive operations must cater for 'terrorists' and foreign Jihadi elements, operating alongside the defender and causing destruction behind attacking forces and in the hinterland. The scale and intensity of such 'terrorist' operations would be much higher and considered legitimate and must be dealt with by robust and well-equipped central armed para-military forces.

Self-Reliant Industrial Base. The excessive use of artillery in Ukraine and Gaza has taught a significant strategic lesson. Both Ukraine and the IDF have faced ammunition shortages due to their heavy reliance on the West. Russia has also experienced similar shortages. To achieve self-reliance, India must focus on the ammunition supply chain and change war doctrine regarding duration and capabilities.

Air Defence Umbrellas over Strategic Locations and Cities. As drones and missiles become more prevalent, effective air defence over key assets is crucial. Traditional offensive strategies are no longer viable due to vulnerable supply lines and large military units. Maintaining control of the skies, seamless air defence coverage, and local protective measures against drones are now more important than ever.

Avoid Entering Urban Areas. The battles of Bakhmut and Avdiivka have aptly proven that while it was important to capture them, the time penalty, the destruction and the human cost are immense. Both sides in Ukraine got involved in a sloggish match with the daily progress limited to just a few 100 metres. There is a need to factor in realistic timelines and the requirement of military wherewithal for the capture of communication centres. It is prudent to avoid attacking communication centres till these have been fully cut off and isolated.

Concentrating offensive forces at decisive points, with the ability to break out from well-defined defensive layouts, will have to be more deliberately carried out in the future.

Concentration of Force. Offensive forces must consider concentrating forces at decisive points rather than dissipating forces all across the front. It has been seen that the Ukrainian Army was unable to launch any worthwhile counter-offensive. At the tactical level, the Ukrainian Army could not concentrate the requisite force

and firepower to break through the three-tiered Russian defences consisting of minefields, dragon teeth and ditches. This can be attributed to a lack of air power and adequate air defence cover for the attacking forces against a superior Russian Air Force and the massive employment of the Lancet and Shahed-136 drones. Tanks including Challenger 2 and Leopard tanks proved ineffective as they were not used concentrated. On the contrary, they were subject to effective hunting by Russian drones making them redundant in battle. Any tank or artillery or Air Defence System in the open is likely to be subject to immediate destruction through low-cost drones in future wars. Concentrating offensive forces at decisive points, with the ability to break out from well-defined defensive layouts, will have to be more deliberately carried out in the future.

Conclusion

In the end, it can be concluded that offensive operations present a unique set of challenges for the military and require a nuanced understanding of tactics, strategy, and ethical considerations. By drawing lessons from the conflicts in Ukraine, and Gaza, and historical battles, the military can better navigate the complexities of urban warfare while minimising civilian harm and achieving strategic goals. As technology evolves and urbanisation continues, the importance of effective offensive tactics and ethical conduct in urban warfare cannot be overstated.

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War Against Civilians: New Trend or Old Wine

AK CHATURVEDI

Abstract

Civil Resistance can take a non-violent path such as that taken by Mahatma Gandhi or it may result in insurgencies and civil wars. In the latter case, because in the beginning the civil resistance is unequal to the military of the established government, a new form of war emerges. This form is 'terrorism', or war unconstrained by the accepted conventions of war. The emergence of this new form of war has led to wars being waged within civilian populations and against civilian populations as opposed to war waged against a uniformed army. Consequently, there are heavy civilian casualties. Is this a new norm? Or has this always been the norm? This article brings out that while this may appear to be a new way of war for the present generation, civilians have always suffered in war. In wars, civilians have been targets either to bludgeon a population or country into submission or because of the unavoidable 'collateral damage'.

Introduction

Civil resistance is a form of political/politico-military/military action that relies on the use of non-violent resistance by ordinary people to challenge a particular power/force, policy or regime or through violent action based on terrorist acts/organised military action. Civil resistance operates through appeals to the state, pressure and coercion. It can involve systematic attempts to undermine or expose the state's sources of power (or pillars of support, such as police,

military, clergy, business elite, etc.). Forms of action include demonstrations, vigils and petitions, strikes, go-slows, boycotts and emigration movements, sit-ins, occupations, constructive programmes and the creation of parallel institutions of government. The Indian freedom movement led by Mahatma Gandhi was a classic example of such a resistance movement leading to a successful change of regime. However, there is always a possibility of resistance turning violent and then ending in a change of regime or petering out of the resistance. Some successful resistance movements through violent means have been, the French Revolution of 1789-99 which overthrew the monarchy in France; the end of the Romanov dynasty in Russia in 1917 by Bolshevik revolutionaries; the overthrow of the Republic of China government, led by the Nationalist party (Kuomintang), by the Chinese Communist Party (CCP) in 1949 and the Algerian Revolution of 1954-62 wherein Algerian National Front defeated France to win independence for Algeria. However, there have been many resistance movements which failed like the Biafra Secessionist Movement 1967-70 in Nigeria which was crushed by Nigeria and the secessionist movement for Tamil Eelam in Sri Lanka by the Liberation Tigers of Tamil Elam (LTTE) between 1985-2009, which was crushed by the government of Sri Lanka. There is a third category wherein resistance against the authority of the state ended when an amicable solution was found to the demand of the warring resistance, and the militants thereafter joined the mainstream. Examples of these are the African National Congress in South Africa and the Mizo and Naga insurgents in India, wherein the government of India addressed their issues the framework of the Indian constitution and they joined the national main stream.

The phenomenon of civil resistance is often associated with the advancement of human rights and democracy. However, it needs to be noted that once it degenerates into violent action, then it increasingly becomes non-democratic and cares very little for the human rights of dissenters.

Civil Resistance and Civil Casualties

The phenomenon of civil resistance is often associated with the advancement of human rights and democracy. However, it needs to be noted that once it degenerates into violent action, then it increasingly becomes non-democratic and cares very little for the human rights of dissenters. One of the most notable features of each of the insurgencies/revolutions/wars mentioned above has

always been excessive casualties of civilians. This is evident from the following table:

Sr. No.	Conflict	Civilian Casualties	Reference
1.	French Revolution and Napoleonic Wars, 1792-1815	100,000	Gwonline.unc.edu
2.	Algerian Revolution, 1954- 1962	300,000-500,000	www.britannica.com
3.	Chinese Cultural Revolution, 1966-1976	750,000-1,500,000	www.sciencespo.fr
4.	Civil War in Sri Lanka, 1983-2009	80,000-100,000	News.un.org
5.	Syrian Civil War, 2011-2023	230,224	Reliefweb.int

As can be seen from the above table, where only five conflicts over a period of 250 years have been discussed, that though conflicts are always violent, one aspect that has remained constant, over the period of time is that the civilian casualties have remained high, as they are always the softest target in war.

Civil Casualties in Wars

In wars against colonial subjugation, movements invariably start with an idealistic thought of meeting the aspirations of the oppressed lot but, as it has been remarked by Lord Acton, and is often repeated, “power corrupts and absolute power corrupts absolutely.” A civil resistance movement can degenerate into a struggle for power depending on the personal aspirations of the leadership. When this happens the line separating rights and wrongs gets blurred. After World War II, colonial powers fought opposition groups and independence movements in Algeria, Kenya, and Vietnam. In those instances, colonial powers conducted urban warfare to target guerrilla fighters who often attempted to blend in with civilian populations. More recently, wars in Iraq and Syria have levelled entire cities, resulting in the deaths of hundreds of thousands of civilians and the displacement of millions more. In 2022, civilians have accounted for over 90 percent of casualties when explosive weapons were used in populated areas.¹

Collateral Damage Due to Conflicts

Wars of all kinds result not only in unintended collateral damage but also direct assaults on civilians as a tool of war. These have often been seen in terms of bombing of hospitals and schools and taking of hostages. Terrorists carry out some of the most visible acts of civilian targeting to advance their political or ideological objectives. In more than one hundred civil wars between 1989 and

2010, almost 50 percent of government forces and 60 percent of rebel groups deliberately attacked civilians—often to gain territory or punish populations loyal to the adversary.

Because of the enhanced lethality of modern weapons, wars in recent times have become increasingly deadly for civilians. Over the past century, fighting has increasingly shifted from remote battlefields to densely populated cities, exposing civilians to greater risk. Between 1990 and 2000, civilians accounted for 90 percent of the world's four million war-related deaths.

The recent conflict in Gaza after a Hamas attack on Israel on 7 October 2024 is yet another grim reminder of the impact of war on civilians. According to the 'Armed Conflict Location & Event Data Project', over 1,300 people were estimated to have been killed in the first three days of fighting which started on 07 October 2023. Further breakdown of the casualties was: 800 Israelis and 500 Palestinians. The mayhem continues and it has been reported that as of 6 February 2024, over 28,000 people (26,751 Palestinian and 1,410 Israeli) have been killed in the Israel–Hamas war.² It needs to be noted that the violent conflict in the region started well before the formation of Israel in 1948. According to the UN, 6,407 Palestinians and 308 Israelis had been killed since 2008 before the latest conflict erupted in October 2023.³ Decades of armed conflict in the region have led to the violent loss of civilian lives on both sides of the conflict.

However, it needs to be appreciated that not all civilian casualties result from direct violence. Many deaths stem from indirect causes, including war-induced poverty, hunger and shortage of medical care. A case in point in this regard is Syria, where average life expectancy has gone down as much as 20 years. Also, trauma on account of having lived through the fear of death, persists well after a conflict ends. It has been documented that one in five people living in active or recent war zones had suffered from depression, anxiety, post-traumatic stress disorder (PTSD), bipolar disorder, or schizophrenia.⁴ Trauma-induced mental health problems can even be passed down through generations, as children of conflict survivors can experience higher rates of PTSD and anxiety disorders.

Conflicts also exacerbate food insecurity. In 2019, ten out of the world's thirteen most urgent food crises were in conflict zones. As a result, nearly half a billion people went hungry in such zones. The UN has warned that the

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Asymmetric Warfare is one of the most serious challenges that States and their militaries are facing in contemporary times which rapidly degenerate, causing security problems to the host state or at times have a trans-national impact.

combination of the COVID-19 pandemic and the Russia-Ukraine crisis has led to the biggest food crisis after World War II, i.e., as many as 1.7 billion people are hungry and/or poor, the level of which is at a new high at present.⁵

Philosopher George Santayana once wrote, "Only the dead have seen the end of war." Even after the bullets stop flying, civilians face enormous challenges trying to rebuild their neighbourhoods, economies, and lives. Conflict causes profound economic

loss. In 2016 alone, economic losses due to conflicts were estimated to be \$14.3 trillion.⁶ An old example will substantiate this fact. Cambodia's Khmer Rouge regime destroyed 90 percent of the country's schools between 1975 and 1979. As a result, 20 percent of adult Cambodians lost years of education. One of the major outcomes of this state contributed to decades of poverty for many Cambodians. In the present times, the cost of Ukraine's reconstruction and recovery as estimated in a February 2023 based on Rapid Damage and Needs Assessment is \$411 billion over the next 10 years.⁷ Similarly, the estimated cost of rebuilding Gaza would be approximately \$50 billion.⁸ Conflict can also displace entire communities. By the end of 2019, nearly eighty million people had fled their homes. Besides trauma of displacement, the provision of food, housing, and jobs for the displaced puts enormous pressure on the country where these Displaced Persons (DPs) seek asylum. The UN High Commission on Refugees reports more than 16 million refugees and 60 million displaced persons around the world today, including asylum seekers and the internally displaced. The wars in Syria and Iraq have produced the greatest share of the Middle East's refugees in recent years, but many more have fled wars and failed states in Afghanistan, Libya, Somalia, Sudan and Yemen. Neighbouring states have faced severe challenges in absorbing millions of refugees, while North African states and Turkey have emerged as key transit hubs for refugee flows into Europe.⁹

Current Conflicts

Asymmetric Warfare is one of the most serious challenges that States and their militaries are facing in contemporary times which rapidly degenerate, causing security problems to the host state or at times have a trans-national impact. A major issue with these conflicts is that their evolution is unpredictable.

Emerging Patterns and Trends

- The Overwhelming impact of globalisation leads to the distortion of the notion of geography and distance due to the information and transportation revolution(s), and the growing influence of technology. This enables ideological terrorists to affect a global or regional arena. Al Qaeda and ISIS are live examples of this trend.
- Gradual diminishing of the Westphalian system of nation-state and emerging centrality of the nation. Russia's claim on the Donbas and Crimea regions of Ukraine due to the Russian ethnic majority in those regions is an example.
- The emergence of a multiple and diverse pool of violent and defiant Non-State Actors (NSAs), empowered by the globalisation impact and diminishing role of states, and enabled by radical ideologies, access to finance and open-source technologies. Examples are, Hamas (active in Gaza) and Hezbollah (based in Southern Lebanon and active against Israel in Northern Israel), Lashkar-e-Taiba (LeT) based in Pakistan and active in J&K. There are many other such organisations and many of these are state-sponsored.
- A loss of monopoly of states on mass-organized violence and resurgence of the specific category from the above-mentioned pool i.e., Violent Non-State Actors (VNSA) due to easy availability of finance, religious/ideological motivation and weaponry. The Houthi Rebels of Yemen are a typical example of this new trend in which rebels have hijacked a state. In the civil war in Yemen between 2015 and 2018 as many as 17062 civilian casualties have been reported.¹⁰
- Another domain where non-state actors are active is 'Organised Crime'. The Colombian drug cartels' "navy" has presumably and theoretically the third largest submarine force in the world, after the U.S. and China.¹¹ These are crude boats which like proper submarines cannot launch torpedoes or cruise missiles, but they are used for covert cocaine shipments. Though being submersibles rather than real submarines, their existence uses up sufficient resources of the US Navy and the Latin American militaries to make them a real problem.
- There has been a change in the global conflict dynamics with the reduced number of interstate wars (armed conflicts) and the parallel rise in a number of intra-state wars (armed conflicts). Tehreek e Taliban Pakistan, Baluchistan Liberation Army and East Turkestan Islamic Movement are some of these organisations.

On one end of the spectrum is the myth that better monitoring of human rights has helped in reducing civilian casualties and on the other end of the spectrum is another realistic assessment that the increased lethality of modern weapon systems has increased the damage to civilians.

Impact of these New Developments

Since the NSAs are not bound by any humanitarian laws, their actions are invariably much more violent not only to their adversaries but they are also indifferent to the collateral damage that could result from their actions. In both cases the biggest casualties are civilians. Tehrik-e-Taliban Pakistan, formed in 2007, is said to have killed a very large number of Pakistani citizens since its inception. Here, it also needs to be noted that the actions of the United States

are no less repressive. It has been reported that post-9/11, the US air raids and ground attacks have resulted in 432,093 civilian casualties.¹² There is nothing new about the state repression. From Timur's invasion of India in 1398 CE when he slaughtered 100,000 natives to the Bucha genocide in Ukraine in 2022 where 458 civilians were reported killed by Russians¹³, the outcome of any conflict has been heavy civilian casualties. In such atrocities, it is not only the NSAs who are the perpetrators but even States. The most notable state-sponsored devastation was that caused by the nuclear strikes on Hiroshima and Nagasaki in 1945. It has been reported that the two bombings killed between 129,000 and 226,000. The worst-affected section of society had always been women, children, the old and the infirm.

Conclusion

The outcomes of conflicts are always death, destruction and widespread devastation. On one end of the spectrum is the myth that better monitoring of human rights has helped in reducing civilian casualties and on the other end of the spectrum is another realistic assessment that the increased lethality of modern weapon systems has increased the damage to civilians. Both conclusions are true. Here it needs to be noted that so long as perceived injustice remains with the vulnerable communities based on religious/linguistic discrimination, so long as atrocities perpetuated based on ethnic divides remain, so long disputes between haves and have-nots remain due to perceptual incongruence between 'nation and 'nation state', conflicts will continue and vulnerable sections of the society will continue suffering in

terms of death, destruction, displacement and devastation because after all, it is question of life and livelihood of the affected people. Preparation for war must factor this reality in so as to better prepare for war. The Civil Defence Organisation with Home Guards and other components which have withered, must be given greater attention than what they are given at present. The very fact that these organisations exist proves that war against civilians have been an acknowledged fact in the near past and is rejuvenating.

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Psychological Enigma in Information Operations

K MOHAN NAIR & RAJAN BAKSHI

Abstract

Information Operations (IO) are a very important part of Hybrid warfare. The central core of IO involves interacting or denying interaction with the intended human mind. The mind reacts to various stimuli and social scientists have discovered various bias which influences an individual during decision making or making an opinion. The paper aims to demystify some of these biases and how the information warrior should look at these psychological aspects while orchestrating informational themes.

Introduction

Information operation is considered to be one of the most important mediums for orchestration of various toolkits of Hybrid Warfare.¹ It can not only be choreographed in a standalone mode but is considered to be an essential constituent for the manifestation of all elements of Hybrid Warfare which require information manipulation to achieve the desired objective. Over a period of time, significant application of the concept has led to a plethora of terminologies which are interwoven with each other. Conflicting definitions of various elements linked to concepts like Influence Operations, Psychological Operations, etc. coupled with perceived differing objectives laid down for each element has led to an inference that the overall concept of Information Operations (IO) is indeed a holistic cocktail of a number of sub-sets to achieve a specified end state.

The fact that information is omnipresent makes it possible to target it through various means but what actually matters is not the location or how it is stored or the way it is transmitted. What actually matters is the destination; the human mind.

Conceptually, the word 'Information' is the buzz word. 'Information' has been defined in Merriam Webster as "something which justifies change in a construct that represents physical or mental experience or another construct".² The entire concept of information operations is thus derived from this basic concept of influencing a defined 'construct'. Its application is in a continuum which could extend from peace time to conflict with a differential effectuation

along the entire spectrum ranging from being discreet to overt. The fact that information is omnipresent makes it possible to target it through various means but what actually matters is not the location or how it is stored or the way it is transmitted. What actually matters is the destination; the human mind.

The central core of IO thus involves interacting or denying interaction with the intended human mind. The critical aspect of influencing the mind is actually linked to the psychological domain since the overall aim of IO is to "influence the perception and behaviour of the enemy, population, and international community on all levels."³ To influence a behavioural change there is a need to influence the mind of a single individual. The individual in turn, as part of society, plays his part in influencing the society. This actually creates a compounding effect. Further, the fact that society is generally fragmented based on demography, religion, caste, creed, language etc. with each group having its own set of beliefs, provides for alternating view points within society thus creating the necessary flux for the spread.

The human mind is extremely complex and it is difficult to gauge the manifestation of the psycho pseudo logic. This unpredictability throws open some basic questions; how does the orchestrator conceptualise the theme if he is unsure of the reaction of the target individual or society to the theme? What is actually required to influence the mind towards a particular theme? How should the message be conveyed for best effect?

Researchers in Psychology have painstakingly dwelled on how the mind reacts to various stimuli. They have discovered various biases which influences an individual during decision making or making an opinion. The paper aims to demystify some of these biases and how the information warrior should look at these psychological aspects while orchestrating informational themes.

Availability Cascade

In psychology, experts have opined that the ease of making decisions is directly related to its availability in the environment and how familiar the reader is with the subject.⁴ One of the elements which one has to consider while undertaking IO is the manipulation of this psychological construct known as the 'availability cascade'⁵. This has been defined as:

“a self-reinforcing process of collective belief formation by which an expressed perception triggers a chain reaction that gives the perception increasing plausibility through its rising availability in public discourse”⁶

To comprehend this concept, one needs to look at the cycle of how self-sustaining events unfold automatically and how everyone gets sucked into the quagmire. A sensitive event reported in media or social media triggers an emotional reaction in the social construct.⁷ The ever-competing media picks it up and adds fuel leading to further discussion on social media platforms and media outlets thus gaining traction and increasing the reach. The political parties and organisations align themselves based on the emotional divide created, supporting their home turf's concern. The orchestrators create additional inputs to keep the availability high in the mind of the society. This generally creates mass hysterics. The government response is now directly proportional to the intensity of the public sentiment.

What enables an emotional reaction to magnify and how does it manifest? How does the mind work in such scenarios? How does one orchestrate a theme based on this psychological construct? To answer these, one needs to look at what impacts an individual's decision making or decision choices or thoughts in such scenarios. As per psychologists, “the perception of an event happening or even judging an event is linked to the ease by which the person can retract it from his mind or connect it to examples which he can think of immediately”.⁸ An individual quickly correlates the prevalent background information to the present situation and then arrives at a conclusion. Since individuals are part of society, the social interconnect then generates a wave of individual perceptions which due to the availability of similar narrative creates a cascading effect which

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further causes its increased availability and thus its credibility. As times pass, the theme gathers strength and any new input either strengthens the earlier belief or is negated being not in sync with the perceived reality. Thus, what actually happens is a self-fulfilling prophesy wherein the individual personal opinions transform the narrative of the community who in turn had actually

influenced the individual in framing an opinion in the first place. Now does a spark happen suddenly?

Fig 1: Availability Cascade Cycle



While it may seem that a single input created a spontaneous reaction, however on ground, one can always trace a build-up, an informational umbrella which is created over a period of time with similar narrative on the same subject to create an availability cascade which is then manipulated at the time of an actual incident. It is also not necessary that bombarding a community with a slated narrative will result in a single public opinion. The societal fault lines

will ensure that there will always be an alternative viewpoint which actually further accentuates the fault line on ground. It is no wonder that the fault lines within society are generally always kept simmering through informational campaigns so that they can be exploited when required.

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Media including social media also play a major role in ensuring availability cascade in society based on their objectives. If the media house is in league with the originator to convey a specified narrative, then it will continue to feed the designed theme to the audience, exaggerating the dangers irrespective of the impact on the target population. However, some independent media houses will seek opportunities to increase the audience based on what the target audience wants to hear or in other words the controversy. If the theme has been able to generate a controversy, then most of the media houses will jump on the bandwagon with selective reporting, interviews and replaying sensitive reactions to keep the issue alive thus increasing the availability in the environment.

An example always quoted for availability cascade are the terrorist related incidents. Statistically, the number of people around the world who have died in terrorist strikes is nowhere close to the number of people who die in road accidents.⁹ But the ease and the frequency with which they come to mind gives it a higher probability. Further gruesome images and repeated reference to the subject makes a common man threatened at all times.

The psychological construct of availability cascades is real and should form the basis for dissemination of all information themes. The art lies in keeping the issue alive.

Anchoring Effects

Another factor which impacts decision making in individuals is the aspect of what psychologists call the Anchoring effect.¹⁰ An individual would depend heavily on the first piece of information he gets while making a decision on a case at hand.¹¹ It is also likely that he will be influenced by the first input he gets. While it is mostly used in negotiating a cost, however the same can also be exploited as part of IO. Anchoring effect is defined as, “a cognitive bias that describes the common human tendency to rely too heavily on the first piece of information offered (the ‘anchor’) when making decisions.”¹²

The general impression of an incident in an operational area could be portrayed as one resulting from lack of proper training or leadership or low morale, if a similar story or back dated incident or a fake story line is popped up along with the developing story—it acts as an anchor.

Individuals deliberating on an incident could be swayed by the anchor story thus resulting in a biased opinion about the circumstances surrounding an event. Further all similar incidents would automatically be linked to the anchor thus impacting the image of an organisation or a particular individual. The snowballing fallout is generally linked to the gravity of the incident and the actors involved. One can also destroy the legitimacy of a political leader or a military leader or an organisation by continuously harping on a trait which is amplified by an anchor story. Concomitantly, one can push a leader to cult status by similar means.

While we may always tell ourselves that we should evaluate what we read and hear but psychologists are convinced that we are always aware of the impact of the anchor.¹⁴ The interesting part is that psychologists have not been able to decipher how it guides and constrains our thought process because of the complexity involved in comprehending the thought process if the anchor had been different or totally absent.¹⁵

Framing Effect

It is a known fact that a piece of information can evoke different reaction based on the way it is presented and is an important facet in planning themes with respect to IO. Psychologists refer to the bias as ‘framing effect’¹⁶ and is explained as, “people reacting differently to a particular decision depending on how it’s presented, or “framed”, emphasizing either the positive or negative aspects.”¹⁷

In framing effect, the crux lies in how the incident or information is being projected to the environment. In fact ‘framing’ functions by causing individuals to focus on certain aspects of an issue or problems instead of others.¹⁸ The framing

of an issue thus significantly impacts how individuals arrive at conclusions and is thus considered crucial in orchestration of informational themes. Images, words or emphasis are generally used to create framing effect.¹⁹ Human beings generally avoid loss and hence themes with a negative frame will invariably be rejected despite

being advantageous to the population. On the other hand, an event or proposal which is detrimental to public good and projected in a positive frame and could well be accepted by the populace. Further studies have shown that this bias impacts the senior lot who due to their limited cognitive capabilities would like to favour information that is easily accessible.²⁰ It would be worth analysing or studying the impact of ‘framing’ on an illiterate section of population or those who have limited means to gain an additional input on the point of view.

Individuals perceive a story line irrespective of the depth of understanding or how much he/she is aware and the confidence he/she showcases, is related to the strength of the story line.

Affect Heuristic²¹

Informational themes also need to factor in the impact of the psychological bias known as ‘affect heuristic’. The term was proposed by psychologist Paul Slovic who alluded that “people let their likes and dislikes determine their beliefs about the world”.²² He also suggested that “people form opinions and make choices that directly express their feelings and their basic tendency to approach or avoid, often without knowing that they are doing so”.²³

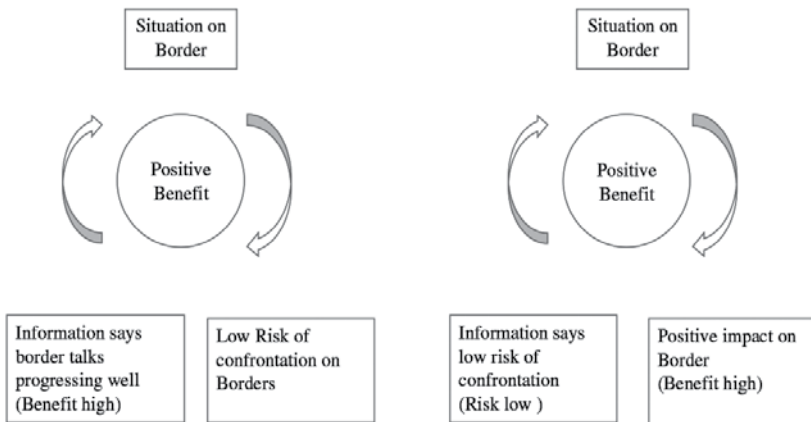
One always wondered as to why we have an opinion or a general feeling about almost everything which comes along in our day-to-day activities irrespective of the complexity of the issue at hand? There are no explanations to certain thoughts like an intuition that the results of an election are swinging towards your favourite party even before the poll survey results come out. This is because individuals perceive a story line irrespective of the depth of understanding or how much he/she is aware and the confidence he/she showcases, is related to the strength of the story line.²⁴ The dominance of the conclusion that Mr X is an excellent choice to lead the country over all possible counter arguments could thus be well based on a bias called ‘affect heuristic.’ It is in fact magnified when emotions are involved.²⁵

This bias in decision making forms a very important toolkit for information warriors. Research by Alhakami and Slovic found “an inverse relationship between perceived risk and perceived benefit of an activity”.²⁶ This finding implies that

people judge a risk not only by what they think about it but also by how they feel about it.²⁷ Research has also found that “high-risk activities tend to have greater benefits than do low-risk activities whereas in peoples mind and judgments high risk is associated with low benefit, and vice versa”.²⁸ The decisions with respect to risk and benefits are related to the evaluation of the stimulus.²⁹

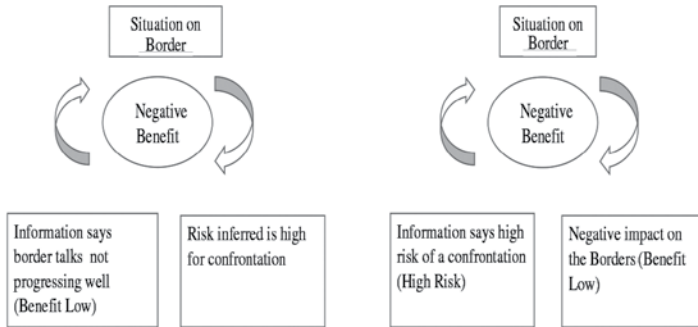
In the informational domain this can be explained by giving an example of the situation on our borders. If the information flow indicates towards border talks progressing well (low risk) then automatically there will be a perception in military minds and that of political authorities that there is a low risk of confrontation (higher benefit). Similarly, if there is an information flow that there is very low risk of confrontation (low risk) it could well lead to a perception that border talks will progress better (higher benefit). On ground the likelihood of talks progressing smoothly in both cases is highly unlikely as the risk factor is low.

Fig 2: Low Risk - High Benefit



Conversely, if we have an information flow which provides an input that the border talks are not progressing well (High Risk), the immediate prognosis would be an increased risk of a confrontation and thus could lead to a build-up on the border (low benefit). Similarly an input of build up with a high risk of confrontation (high risk) will automatically build up a perception that border talks will fail (low benefit). However, in these two cases there is a high probability that there will be a considerable push by all agencies for talks as the risk factor is high.

Fig 3: High Risk - Low Benefit



In both the cases the inputs of risk and benefits are likely be judged casually by the decision makers based on the informational stimuli and not by any analytical evaluation. This bias would amplify in time critical decision making. The understanding of this psychological paradigm is critical for national security experts as the bias could impact decision making. For the information warriors, the adversary can well create an informational environment which changes the risk perception vis-à-vis the benefit accrued in any scenario and we need to be able to identify it so that we hedge our strategies accordingly. Providing information bytes about the accrued benefit could also change the perception of risk and would be a major deception toolkit for the information warriors.

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The Illusion of Validity

The psychological construct of 'Illusion of validity'³⁰ is another facet in IO which needs deliberation. It was introduced by psychologists Daniel Kahneman and Amos Tversky³¹ and has been explained as, "a cognitive bias that describes our tendency to be overconfident in the accuracy of our judgements, specifically in our interpretations and predictions regarding a given data set."³¹

In spite of the fact that it is very difficult to predict the future trajectory, we find subject matter experts, media anchors, academicians, retired bureaucrats, men in uniform giving opinion on various issues of national interest with a sense of confidence which one finds alluring. It gives a feeling that the speaker has access to privileged information which may be far from truth. Daniel has attributed this feeling of confidence to the consistency in the informational environment created and the ease which the information is processed.³² The individual actually creates a story in his mind which may not be true.³³ The confidence to predict the future is based on an illusionary imagination that we understand the past and the present.³⁴ Further an expert would continue to search for all the information which will reinforce his understanding of the subject and his pre-existing beliefs.³⁵

Information operations thus need to manipulate this bias to ensure that experts who are in sync with institutional line of thought are continuously fed inputs so as to create the required confirmation bias. Further countries spend a large chunk of money in donations towards independent think tanks with a caveat that the projects being undertaken are in sync to their narrative. It is this narrative that keeps getting bombarded day in and out through various means and plays a major role in influencing the minds of the experts who in turn influence the populace and the decision makers.

Other Biases

Another psychological paradigm in our understanding of Information theme is the fact that human minds have a basic limitation in correlating small risks. Sunstein, a psychologist explains that the human mind will “either ignore them altogether or give them far too much weight— nothing in between”³⁶ He coined the word “probability neglect”³⁷ to explain the phenomena. Dreadful possibilities come easily to one's mind and trigger emotional response which impacts decision making as compared to many other activities. Communal riots are one such example where the probability of the event happening is very low but will evoke a response if brought up in the information domain. The combination of two psychological constructs of ‘probability neglect’ and ‘availability cascade’ while planning for informational themes would enable for gross exaggeration of minor threats and thus needs to be well comprehended.

Psychologist Daniel also explains that our mind “automatically and effortlessly identifies causal connections between events, sometimes even when

the connection is spurious”.³⁸ The mind always wants to attribute a cause to any incident irrespective of the fact that it is not rational. The results are magnified when there is a pattern formed based on random events. The human mind will concoct a story line and will find connections that would seem plausible. The connection established on social media by some academicians between Israel- Hamas conflict and the Russian-Ukraine conflict is one such example. This is sometimes dangerous and unless the message is immediately negated, the associations that it evokes will spread as if the message were true.

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Conclusion

Understanding how the human mind works is extremely important for practitioners of Information warfare. The planning of the themes and how it should be orchestrated and the defensive mechanism against the adversarial information campaign can only be done if one comprehends the psychological conundrum of how each input is likely to be processed by the human mind. The bias discussed above are a tip of the iceberg and there are many more which needs to be analysed.

The traditional methods of information warfare has undergone a transformation with technology especially AI and cyber-enabled IO. It's a known fact that democratic countries are more vulnerable to these toolkits as democratic values allow the citizens the freedom to choose their media inputs. Cyber tools like bots and “deep fake” videos have created a capability where it will be very difficult to track what is true and what is fake. Research has shown that once an individual is exposed to the input and the human mind analyses it, the corrective measures brought in later are not likely to dispel the impressions induced by the original exposure.³⁹ The cyber warriors too need to understand the psychological pseudo logic of how an input will be acted upon while creating the software for bots or other programs. AI will also be used increasingly to automate the response or create new themes to influence the target population. Though technology will increasingly make information domain the most contested region in the entire spectrum from peace to conflict but psycho pseudo logic

Psychology, as a subject thus has to be inherent in the curricula of all Information Warriors if one wants to orchestrate a well-informed information campaign. This is a National Security imperative.

would remain the mainstay of such kind of operations. Psychology, as a subject thus has to be inherent in the curricula of all Information Warriors if one wants to orchestrate a well-informed information campaign. This is a National Security imperative.

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SCHOLAR WARRIOR

SECTION II GEOPOLITICS

CENTRE FOR LAND WARFARE STUDIES

UN Security Council and the Israel and Hamas War: A Review

AK BARDALAI

Abstract

When the international community is unable to prevent a potential conflict from occurring, the UN Security Council becomes the first victim of the world's criticism, because of its perceived role as the guardian of peace despite its organisational limitations in maintaining world peace and security. Russia's invasion of Ukraine in February 2022 and the Gaza War following Hamas's attack on Israel on 7 October 2023, are two such current examples. This article argues that it is the power politics behind the Security Council that is more responsible for the UN's inability to restore peace rather than the institution itself. Notwithstanding the blame game, the UN Security Council plays an important role in shaping the world opinion to put pressure on powerful nations, especially the permanent members of the Council to come to terms to find a negotiated solution to a conflict.

Introduction

As the UN was trying to cope with growing impatience over the its failure to either prevent Russia from invading Ukraine or contain the war through at least a ceasefire, Hamas attacked Israel on 7 October 2023.¹ Repeated proposals in the UN Security Council demanding a ceasefire continue to reach a dead end

because of the veto power of the permanent members (P5). The story was the same when Russia invaded Ukraine. President Zelensky told the Security Council that since Russia has a veto, the UN Security Council is useless.² Robert Mood, the US Ambassador to the UN, during his briefing to the Security Council, remarked that it is the responsibility of the Security Council to maintain international peace and security.³ Earlier, the same US had vetoed a Security Council resolution calling for an immediate humanitarian ceasefire in Gaza.⁴ This resolution, if adopted, would have demanded an immediate ceasefire and the unconditional release of all hostages. In contrast, Russia and China vetoed a draft resolution condemning Hamas.⁵ In the case of the Gaza War, any resolution supported by the US that criticizes Hamas will be vetoed by Russia and China. On the other hand, a resolution calling Israel to cease fire will be torpedoed by the US. It is, therefore, quite common to blame the Security Council for not being able to prevent a conflict from occurring, spreading, and bringing it to a halt despite the well-known limitations. But should it only be the organisational limitation of the Security Council that is responsible for failing to address a threat to international peace and security? This article aims to explore this by analysing the limitations of the Security Council by using the Gaza War as a piece of case evidence. The author argues that while the Security Council has a definite role, the powers controlling the Security Council are responsible for maintaining world peace. The article brings forward a brief insight into the birth of the UN, and the functioning of the Security Council. In the final section, the prospects of maintaining international peace and security, regardless of the inherent limitations of the UN Security Council have been examined.

The UN, the Charter, and the Security Council

The evolution of the UN is connected to two developments of the international order—the League of Nations and the Westphalian System.⁶ The UN was established as a replacement for the League and has the authority and responsibility to ensure international peace and security including using all means under Chapter VII. However, it does not have any standing army under its command, to impose such an authority. The UN was expected to plug the gaps in the League, which eventually failed to prevent World War II. To

enforce peace and supervise ceasefire agreements, the UN had to look to the member states to contribute troops. Therefore, the UN by itself, is not capable of addressing the challenges of the threat to security without the support of the member states. The League faced many challenges because of internal divisions among the members and it failed. Finally, it had to be dissolved in 1946 and was replaced by the UN.⁷ The UN was conceived to respect state sovereignty as mentioned in the Westphalian System, which is reflected in Article 2 (1) of the UN Charter.⁸

The UN Charter is the founding document of the UN and was signed in San Francisco on 26 June 1945 with 50 original signatories, which has now 193 Member States. It was later ratified on 24 October 1945, giving formal birth to the UN.⁹ Blaine Sloan, who was Director of the UN General Legal Division, quoting the late Sir Humphrey Waldock, one-time President of the International Court of Justice, opined, that since all members of the UN are parties to the Charter, the Charter is technically a multilateral convention, but in reality, it is the constitution of the UN.¹⁰ The Preamble of the Charter that is mentioned at the beginning and the purposes and principles have been defined in Articles 1 and 2 of Chapter I. There are seven purposes of the UN Charter. However, the first and primary purpose of the UN Charter is to maintain international peace and security. The responsibility for this rests on the UN Security Council, which is one of the six organs of the UN including the General Assembly and the International Court of Justice. The functions and powers, voting and procedure of the Security Council are enshrined in Articles 24 to Article 32. Article 27 stipulates that the decision of the Security Council on all matters will be made by an affirmative vote of the permanent members. It implies that no resolution can be passed if a negative vote is cast by any permanent member. At the time of its adoption, there were seven non-permanent members of the Security Council. The amendment of 17 December 1963 by the General Assembly which came into force on 31 August 1965 expanded the non-permanent members of the Security Council from six to ten, providing decisions of the Security Council on procedural matters to be made by nine affirmative votes including concurring votes by the P5.¹¹

It is the responsibility of the Security Council to determine the existence of any threat to international peace and security (Article 39 of the Charter).¹² Upon bringing to its notice any new threats to international peace and security, the Security Council discusses the validity of the threat and determines what action is to be taken.¹³ Lise Morje Howard, Professor of Government and Foreign Policy

at Georgetown University observed that unless there is strong consensual support or political will among the five P5 members, the outcome is generally negative. Because the action of the Security Council is influenced by several situational factors. Howard further states that “the UN is merely a venue for powerful states to achieve their goals

in the international political arena.”¹⁴ The UN also does not have any ratified procedure for mandate formulation. Mandates are drafted and formulated following an unofficial tradition called the ‘Pen Holder System’¹⁵. This system of continuous leadership by specific Council members (P3–UK, France and USA), on specific issues developed around 2008-2009 and was firmed in by 2010.¹⁶ Once a threat is determined, there is consensus, and a resolution is passed, the next step will be to look for the support of the member states for the appropriate action to be taken. However, since there is no military force directly under the command of the UNHQs, implementation of the Security Council resolution is a challenge, more importantly when either of the P5 members is indirectly a party to the conflict. Interestingly, during the drafting of the UN Charter, to address the weakness of the League, the idea of creating a UN Army directly under the command of the UN Military Staff Committee was conceived, it was the US that volunteered to around 40,000 soldiers to set up the UN Army. But Moscow got worried, and the UN Army never saw the light of the day.

The UN also does not have any ratified procedure for mandate formulation. Mandates are drafted and formulated following an unofficial tradition called the ‘Pen Holder System’.

Israel-Hamas War and the UN Security Council

The Security Council, on its part, has passed several resolutions related to the release of hostages, and cease-fire to deliver humanitarian aid. The most notable one was when the Security Council backed the resolution of large-scale aid to Gaza but not a cease-fire.¹⁷ The evidence shows that the war is continuing only because of the organisational constraints of the Security Council, imposed by the veto powers. It implies that if the element of veto was absent, the Security Council would have had more power to wield. This will be true to only a certain extent as regardless of what the Security Council decides if the powerful nations back one of the parties, the bombardment of Gaza by Israel will continue. For example, while the US publicly desires that Israel should make a credible effort to protect civilians, it does not ask Israel to stop the bombardment.¹⁸ Meanwhile, a \$95 Billion aid bill for Israel, Ukraine, and Taiwan, is in front of the US House

Despite the organisational limitation and power play by the P-5, there are instances of the Security Council measuring up to the challenges.

of Representatives.¹⁹ Therefore, mere stern words for public consumption will not help unless the US goes beyond this. As reported by Michael Hanna of the Financial Times, as Israel gets ready to launch an assault on Rafah, the worst-case scenario looms ahead, only the US can stop it by applying pressure

which it has been reluctant to so far.²⁰

To assess the efforts of the Security Council in addressing the challenges of the Gaza War requires a brief insight into the history of the Security Council's dealing with its limitations is given in the succeeding paragraphs. These were mostly ad hoc, totally personality-based and hence temporary. There were also several failed attempts to place institutional measures for reforming the Security Council.

Ad hoc-ism

Despite the organisational limitation and power play by the P-5, there are instances of the Security Council measuring up to the challenges. The Gaza crisis of 1956 and the secessionist movement by Katanga (Congo) in 1960 were two shining examples. Soon after the US withdrew its financial assistance for constructing the Aswan Dam on the Nile, Egyptian President Gamal Abdel Nasser nationalised the Suez Canal company on 26 July 1956. What followed thereafter was the triggering of military intervention by Israel from the direction of Sinai on 29 October 1956. This was part of a secret plan 'Operation Musketeer', between France, the UK and Israel. The plan was to force Israel to withdraw to initiate negotiations with Egypt and if Egypt did not agree, then France and UK were to take control of the canal. Secretary General Dag Hammarskjöld took the initiative to convene the General Assembly under the 'Uniting for Peace' resolutions procedure. Hammarskjöld's initiative combined with a veiled threat to resign if the Security Council did not support him, and the ability to control the ensuing discussion led to the establishment of the United Nations Emergency Force (UNEF) on 7 November 1956.²¹ With France and the UK on one side and the US not wanting to allow the USSR to take the upper hand, there was an impasse. With skilful manoeuvring within the dynamics of inter-state relationships among the P5, Hammarskjöld broke the impasse.

The second instance was when the Security Council was caught in the power play between the West and the Soviet Union soon after Belgium, the

colonial master of Congo, announced Congo's independence on 30 June 1960. This was followed by Moïse Tshombé, the head of the provincial government of Katanga declaring the independence of Katanga on 10 July 1960. President Joseph Kasavubu and Prime Minister Patrice Lumumba of Congo appealed to the UN on 12 July 1960 for assistance, citing Belgium's involvement in inciting the secessionist movement of Katanga. Dag Hammarskjöld, the Secretary-General, exercising his power under Article 99 of UN Charter XV called for an immediate meeting of the Security Council. On 14 July 1960, the Security Council adopted resolution 143 calling for the withdrawal of Belgian troops and authorising the Secretary-General "to take all necessary steps" to provide the government with "such military assistance as may be necessary" until the national security forces are able "to fully meet their tasks."²²

In both cases, the UN, through its dynamic Secretary General, took the initiative to force the General Assembly and the Security Council's permanent members to take action to prevent a war.

Institutional Measures

The most notable concrete proposal to reform the UN Security Council was recommended by Secretary-General Kofi Annan in his report 'In Larger Freedom: Towards Development, Security and Human Rights for All' submitted to the General Assembly on 21 March 2005 in preparation for the Millennium +5 Summit in September 2005.²³ The recommendations comprised two models, both aimed at enlarging the members of the Security Council without any veto powers. The proposal could not get enough traction because the opponents felt that it recommended only enlarging the Security Council, while real reform should be by taking away the right to veto.²⁴ The urgency of Security Council reforms could not be greater than in the present times, with the continuing wars in Ukraine and Gaza.²⁵ All members including P5 seem to express overwhelming support for any proposal for Security Council reform but fall short when it comes to the formal acceptance of a proposal. Annan's proposal of 2005 appeared to have been highly ambitious aiming at an increase in the number of seats in the Security Council, a probable reason for its failure.

Article 108 of the UN Charter allows for changes to the Charter, but any change must be ratified by two-thirds of UN members in the General Conference as provided in Article 109. Despite that, the P5 can effectively veto the changes to the Charter, if it calls for sharing of their power of vetoing or taking away their right to veto. On the positive side, two-thirds votes may

Whenever any powerful nation especially the P5 is either directly involved or supporting one or more parties to the conflict, there is bound to be a deadlock in the Security Council.

make it politically difficult for the P5 to stand in the way. Therefore, in hindsight, Kofi Annan's 2005 plan if it was focused more on getting widespread support of the General Assembly based on Article 109, would have had a better chance to at least start the reform process rolling.²⁶

What Next?

Whenever the international community (through the UN) is not able to either prevent a conflict or halt it, the UN Security Council becomes the first unintended victim. An ineffective Security Council is cited as one of the reasons for the failures of even the well-intended peace operations.²⁷ Whenever any powerful nation especially the P5 is either directly involved or supporting one or more parties to the conflict, there is bound to be a deadlock in the Security Council. The power of the Security Council is provided by the UN Charter, which draws its validity from the member states. Therefore, to make the Security Council more effective, the factors that make it ineffective must be either removed or modified. That the UN Charter needed changes, was felt soon after the UN was established, with 50 signatories. Michael M Gunter, professor at Tennessee University, opines that the UN Charter became partially obsolete before entering into force because the atomic explosion took place after the document was signed.²⁸ Mr Ramaswamy Mudaliar who signed the document on behalf of India, had given in writing during the 14th Plenary Meeting, 18th January 1946, that India had signed the Charter unwillingly and on condition that the Charter would be reviewed after ten years.²⁹ There were several attempts to reform the Security Council. The successful amendment of 1965, apart from increasing the number of non-permanent members, did not make any difference to the effectiveness of the Security Council. It also did not attempt to dilute the power of the P5 members to block any proposal if it did not suit their political interest. Essentially, as long as one of the P5 members exercises its veto power, the Security Council resolution can never be passed. Apart from this, when if a P5 member is a party to the conflict either directly or indirectly, as put in by Ukraine's President, the Security Council is rendered helpless to do anything except make lofty statements.

As seen from examples of Gaza in 1956 and Congo in 1960, the Security Council was at loggerheads. However, the use of skilful diplomacy by a dynamic

leadership could find a way around the same limitations. The personal result of the determined initiatives of a well-respected UN leader at that time could have been reflected upon by all the subsequent UN Secretary Generals. It is possible to make the Security Council work if the P5 members are serious in their support of any peace proposal. Conversely, the P5 while allowing the Security Council to function by abstaining from voting, can continue to

It is possible to make the Security Council work if the P5 members are serious in their support of any peace proposal. Conversely, the P5 while allowing the Security Council to function by abstaining from voting, can continue to support for continuation of the conflict.

support for continuation of the conflict. "This is what happened in the case of Gaza War. UN Security Council Resolution 2728 of 2024 calling for an immediate ceasefire in Gaza is a remarkable step with 14 members' affirmative voting and the US abstaining.³⁰ Sadly, instead of halting the offensive, Prime Minister Netanyahu lamented about the US abandoning Israel and announced the invasion of Rafah in early April to secure the release of the hostages.³¹ The US abstaining could imply its silent support for Israel from outside the Security Council. Adopting the resolution is only crossing the first hurdle. Implementation will be a bigger challenge. As of now, other than isolation of Israel by the international community using other means, there seems to be no other option. Because an attempt to enforce it will only create a bigger crisis". Therefore, the real power to make or break peace is with the powerful nations and not the UN Security Council. As evidence suggests, even taking away the veto power of the P5 may not guarantee a safer world because the implementation of a resolution will be equally challenging.

When Hamas attacked Israel on 7 October, the world opinion was with Israel which is changing even while the UK and US continue to support Israel. By now, close to 30,000 Palestinians have been killed and most of Gaza has been destroyed and millions rendered homeless. The world's response has been calling for an end to the violence and even South Africa dragging Israel to the International Court of Justice for committing genocide.³² Without downplaying the act of genocide, the Biden administration seemed to have come around to asking Israel indirectly to protect civilians.³³ The harshest comment came when Vice President Kamala Harris rebuked Israel in her remarks on 3 March 2024 followed by the President Biden in his State of the Union Address of 7 March 2024.³⁴ On 20 February 2024, the US again vetoed the Algerian draft Security Council resolution calling for a

cease-fire. This is the third time Washington has rejected a cease-fire proposal since Hamas attacked Israel on 7 October 2023. However, the alternative draft by the US suggesting an immediate truce, is a strong signal for Israel not to take the US support as guaranteed.³⁵

Ending war does not mean only the end of military aggression. Saving the surviving Palestinians from hunger and the misery of war is equally important. Amidst Israel's bombardment of Gaza, humanitarian aid continues to flow, and the United Nations Relief and Works Agency (UNRWA) team is still functioning. The change has come in, among other factors, because of the Security Council flagging the issue and creating a huge public opinion to bring pressure on the powerful nations, especially the US. One can now hope for a solution with the US going beyond public rhetoric. Such hope could be brighter if Donald Trump was to win the Presidential election.³⁶ While the UN Security Council can be credited for what it has been able to achieve so far, it is likely to remain hostage to the power play for some more time to come.

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Scale and Scope of the Houthi Threat to Shipping

ANIL JAI SINGH

Abstract

One defining feature of the Gaza and Ukraine conflicts is that despite both being localised continental conflicts and mainly restricted to their respective territories, their spillover into the maritime domain has had global implications that are impacting the smooth functioning of the global economy. This article examines the impact of this conflict on maritime global commons and brings out why securing the maritime global commons is extremely important. To do this there is a requirement to develop a coordinated multi-dimensional, multi-layered and multi-national effort to combat the threats to the international order at sea.

Introduction

The continuing political imbroglio in West Asia is showing no signs of abating. The world's half-hearted attempts at brokering a peaceful settlement or even a cease-fire is having no effect on Prime Minister Netanyahu's intransigence and single-minded determination to eradicate Hamas at any cost, irrespective of the humanitarian and material cost of the conflict. The US, as is its wont, is making the right noises but vetoing every attempt by the United Nations to force Israel's hand in accepting a ceasefire, however tenuous it might be. The continuation of this conflict is also encouraging other state-sponsored militant organisations in the region including Hezbollah in Lebanon and the Houthis in Yemen to wade into this quagmire and actively support the Palestinian (read 'Hamas') cause at

the behest of their sponsors. This is further destabilising the region.

One of the defining features of this conflict and also the Russia-Ukraine conflict is that despite both being localised continental conflicts and mainly restricted to their respective territories, their spillover into the maritime domain has had global implications that are impacting the smooth functioning of the global economy. In the case of the former, the effects of the Houthi attacks and the Somali piracy are already being felt and will only get further aggravated if this continues for much longer, whereas in the case of the latter, it has food security with the worst afflicted being the Global South. In the maritime domain, even a single incident, however inconsequential it may seem, can impact the global economy. On 23 March 2021, the grounding of the MV Ever Given in the Suez Canal had blocked shipping for five days or so, leading to losses estimated at almost US\$ 10 billion per day. In a restricted waterway such as the Bab-el-Mandeb, the economic losses due to prolonged disruption of shipping cannot even begin to be counted.

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The Threat at Sea.

It will soon be three months since the Houthis carried out their first attack on merchant shipping in the Red Sea in mid-November 2023 in support of the Palestinians in the ongoing Israel-Hamas conflict. This led to the launch of Operation Prosperity Guardian, a US and UK-led operation tasked with ensuring freedom of navigation and the safe passage of all shipping passing through the Red Sea–Bab el Mandeb Strait and the western Arabian Sea, the critical waterway connecting the Atlantic Ocean and the Mediterranean Sea to the Indian Ocean.¹ The responsibility of this lies with Task Force 153, which is one of the five Task Forces under the Combined Maritime Forces (CMF), headquartered in Bahrain and focuses on Red Sea security.

As this article is being written, the Houthi attacks on commercial shipping in the troubled Red Sea–Bab el Mandeb–Western Arabian Sea shipping route are continuing with unfailing regularity. MV Rubymar, a British-owned, Belize-flagged merchantman suffered a missile attack in the Red Sea on 18 February 2024, forcing the 24 crew members to abandon the ship, which is now reported

to be sinking. On 22 February 2024, MV *Islander* a British-owned and Palau-flagged merchant ship was targeted by two anti-ship ballistic missiles and was fired at by the Houthis from southern Yemen. The ship suffered minor damage although injuring one of the crew members. An Indian Navy destroyer was at hand to provide relief. It sent an Explosive Ordnance Disposal (EOD) team and a medical team on board to assist. The ship was soon on its way to its destination.

The more recent Houthi attacks have become increasingly lethal with their increasing use of anti-ship cruise missiles, anti-ship ballistic missiles, and other sophisticated systems. Perhaps the most worrying is the use of underwater drones, which was confirmed by the US Navy on 19 February. These technologies are available only in a few countries, thus confirming the involvement of state actors in the background. Vice Admiral Brad Cooper, the Deputy Commander of United States Central Command (CENTCOM), has confirmed the Iranian presence in Yemen alongside the Houthi militia. The presence of the Iranian spy ship *Behshad* in the Red Sea is suspected to provide the Houthis with real-time tracking and targeting data on the movement of merchant shipping through the area.²

While Operation Prosperity Guardian and the attempts to contain piracy continue, the increasing frequency and lethality of these attacks have led to the launch of the US and UK-led Operation Poseidon Archer,³ which has taken the counter-attack to the Yemeni mainland targeting Houthi military and missile facilities, though with limited success so far. This has led the Houthis to also include all American and British ships as possible targets, thereby raising the probability of an escalation into a wider conflict at sea. In fact, the Houthis have come dangerously close to attacking at least two US Navy destroyers (USS *Gravely* and USS *Carney*). The Houthis have also downed two MQ-9 Reaper drones with the Iranian-supplied 358 (Saqr), loitering Surface-to-Air missile (SAM). On 19 February 2024, the European Union Naval Force (EUNAVFOR) also entered the fray with the launch of Operation 'Aspides'⁴ to provide a robust capability to ensure freedom of navigation in the Red Sea.

India, despite being a full member of the CMF since November 2023, has chosen not to join Operation Prosperity Guardian but has been at the forefront in addressing the resurgence of Somali piracy in the western Indian Ocean and the Arabian Sea. Piracy, though seemingly less kinetic in comparison to the Houth-led maritime terrorism, is equally destabilising for global shipping. It had taken over 20 navies and more than five years to quell Somali piracy in this region between 2008 and 2013, though the Arabian Sea remained a designated 'High Risk Area' till 2022. In the present case, the unholy nexus between the

Houthi attacks and piracy has led to ships in the Bab-el-Mandeb and the Arabian Sea also being damaged by drone and missile attacks. India initially deployed five major surface combatants including three guided missile destroyers, raised it to 10, and then 12 soon thereafter. The drone attack on MV Chem Pluto, a little over 200 miles from Porbandar, that damaged the ship which had to be escorted to Mumbai, brought home the severity of this threat in India's neighbourhood, and the immediate need to not only protect shipping, but also to nip this problem in the bud.

The Red Sea is an important waterway with 12 percent of global trade, 30 percent of global container traffic, and 8 percent of global LNG passing through it.

The Impact on Global Shipping

The immediate fallout of the first few Houthi attacks was the rerouting of ships, including some of the world's largest shipping companies like Maersk and Hapag-Lloyd, around the Cape of Good Hope, instead of transiting through the Suez Canal and the Red Sea. Besides the danger to the ships, the attacks also led to an exponential increase in insurance premiums which further deterred companies from sailing their ships through the Red Sea. However, going around the Cape of Good Hope increased the transit distance by almost 8000 kms, the sailing time by ten days or so, and led to consequent delays in delivering cargo, with an accompanying increase in costs and the disruption of global supply chains. The Red Sea is an important waterway with 12 percent of global trade, 30 percent of global container traffic, and 8 percent of global LNG passing through it.⁵ The Bab-el-Mandeb strait, which connects the Red Sea to the Arabian Sea is 18 miles wide at its narrowest, and ships transiting in either direction have to follow a traffic separation scheme. This limits their ability to manoeuvre and avoid an incoming attack, thus making them easy pickings for the Houthis. This route is the lifeline for the Indo-Pacific region, a majority of whose trade passes through it. With more than 60 percent of the global population resident in the Indo-Pacific and generating almost two-thirds of the global GDP, the safe passage of shipping in this interconnected world, where trade dependencies transcend traditional geographies, and resilient supply chains are a strategic imperative, is critical for countries across the globe.

Media reports suggest that traffic moving through the Suez Canal fell more than 60 percent in the three-week period from December 18 to January 7, compared to the corresponding period last year, while the number of containers

fell from 3.3 million to under 1.3 million. The UN Security Council Resolution 2722 on 10 January 2024, passed by a vote of 11 to 4, demanded that the Houthis stop attacks on commercial vessels in the Red Sea. At the recently-held Raisina Dialogue in New Delhi, Admiral Sir Ben Key, the First Sea Lord and Chief of Naval Staff of the Royal Navy, stated that as per the British Chamber of Commerce, more than one-third of British firms had been affected by the Red Sea crisis. Besides the disruption, the rapidly escalating costs of transporting cargo are equally a matter of concern. Prices of cargo transportation had jumped more than three-fold in the first two months between end-November 2023 and end-January 2024. An UNCTAD note of 22 February has warned that, "Recent attacks on commercial vessels in the Red Sea have severely affected shipping through the Suez Canal, adding to existing geopolitical and climate-related challenges facing global trade and supply chains," and goes on to highlight that the "full impact of higher freight rates will be felt by consumers within a year." Therefore, if this imbroglio continues, the global economy is going to face major headwinds.⁶

Impact on India

India is essentially a maritime nation with its destiny inextricably linked to the oceans. Its maritime credentials and its vantage location in the Indian Ocean are both, a strength and a vulnerability. With a coastline of 7516 kms (or over 13000 km if one includes its strategically-located island territories) and an Exclusive Economic Zone (EEZ) of more than 2 million sq. kms, its future sustenance and development is dependent on the sea. It straddles some of the most important sea lanes in the world and it has a powerful multi-dimensional blue water navy securing its maritime frontiers. These are its maritime strengths. However, it is the vulnerabilities that are a cause for concern. 90 percent of its trade by volume and more than 80 percent of its oil and gas travels over the sea. Its energy has not been adversely affected as yet because of the small percentage coming through the Red Sea, but in case the Iranian involvement becomes more obvious, or if Iran gets directly involved, there is a possibility of it disrupting the movement of tankers through the Straits of Hormuz. This would have a major impact on India's energy security as 60 percent of our oil and gas imports transit through the Persian Gulf. More than 50 percent of its trade also travels to and from its west. The threat to the safety of shipping was also discussed by Dr Jaishankar during his interaction with the Iranian Foreign Minister in Teheran in January 2024.⁷

The global disruption of shipping traffic is impacting India in much the same way as it is the rest of the region. Freight rates have increased more than three-

fold over the last few months, which will have a cascading effect on the economy. It is understood that exporters are holding back their shipments to the extent of over 25 percent,⁸ with large volume exports like basmati rice, pharmaceutical goods, steel, textiles and perishable goods amongst others being worst affected. The export of refined petroleum products has also reduced.⁹ The government has been

allaying the apprehensions of industry on the possible impact of this crisis on the Indian economy, but a prolonged stand-off does not augur well for India. As an Indian Ocean power and one of the few nations to have good relations with countries on both sides of the divide in West Asia, India must leverage its position to stabilise the region through engagement and through various bilateral, and multilateral mechanisms that exist in the region.

The Great Power Game

While a major part of the world is concerned about the economic effects of this crisis, the great power contestation continues. China, which wants to re-shape the future international order into one with 'Chinese characteristics' has stayed clear of any direct involvement, but its sympathy with the Houthis is evident from their declaration that Chinese and Russian ships will not be harmed, and in fact none have been. Apparently, ships passing through the region have been announcing the presence of Chinese crews on board over the AIS to avoid being attacked.¹⁰

The US too, has been acting in its own interest and has been vetoing the UN's call for a ceasefire. However, that notwithstanding, as a global superpower, it has intervened in addressing the Red Sea crisis. China is hoping that the US entanglement in West Asia and the Russia-Ukraine conflict will deflect attention away from its Indo-Pacific priorities and dilute its approach to the region. However, China, for all its pretensions of rivalling the US as a superpower still lacks the capacity, capability, and most of all the confidence to project its power in its 'far abroad.' Its parochial anti-US approach affects its objectivity and it often ends up supporting the wrong side as in this crisis. However, this is not to suggest that either side is acting selflessly, with both actively seeking to weaken the other in the region. West Asia is of particular interest to both. China has been

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The abrogation of JCPOA by President Trump and the imposition of sanctions on Iran and on those who chose to do business with it, led to a power vacuum in the region which China was quick to exploit.

China was quick to exploit. China became the world's largest net importer of crude oil in 2017; it is estimated that by 2040, about 80 percent of China's crude oil will be imported, with a major portion of it sourced from West Asia, including Iran. Given China's current growth trajectory, this increase from the 2019 figure of 67.43 percent will mean a substantial increase in quantity, the current economic headwinds notwithstanding. Hence West Asian stability and its presence figures prominently in the Chinese security calculus.¹¹

The impact of the Houthi attacks is affecting the maritime domain in more ways than one. Besides the threat to shipping, the safety of the undersea cables in the Red Sea region, which is critical for global connectivity, have also been in peril. It has been reported that, of the 16 fibre-optic cables in the Red Sea region¹² handling about 17 percent of data stretching across Europe, India and East Asia, at least one fibre-optic line has been severely damaged (connecting Egypt and Kenya) and there is suspected damage to at least another three.¹³ The Houthi intent to damage the sub-sea cables had been forewarned as a clear and present danger, and susceptible to attack in shallow waters, where depths are only 300 feet or so. The Houthis had earlier also posted a map of these cables and termed them as strategic. Repairing these damaged cables will also be a challenge because of the reluctance of cable ships to operate in troubled waters.

Coordinating the Response

Presently there are eight multinational forces besides independent navies operating in these troubled waters. Five of these are the Task Forces which are part of the 41-nation US-led CMF which also includes nine EU states. The US also leads the International Maritime Security Construct (IMSC) with the UK to secure the Straits of Hormuz. The EU in addition has three. These include Operation Atlanta which has been in the region since it was established to counter Somali piracy over a decade ago. The others are 'The European Maritime Awareness in

the Strait of Hormuz' Initiative (EMASoH) which has its Operation Agenor, launched in 2020 and the recent Operation Aspidos launched in January 2024. Countries like China have a permanent naval presence with a base in Djibouti. In the earlier anti-piracy campaign, it coordinated closely with other navies but with its regional geopolitical ambitions, its priorities may have changed. Hence, it is essential to develop a coordinated response strategy and ensure the optimum deployment of substantial naval presence towards addressing a threat from this quarter

if it arises. However, this could also give rise to fresh geopolitical challenges. Multilateral mechanisms like the Indian Ocean Rim Association (IORA), the Djibouti Code of Conduct, and the Maritime Security Programme (MSP) of the Indian Ocean Commission should be leveraged to provide this coordination. For example, India has not joined Operation Prosperity Guardian in the Red Sea but has done a stellar job in addressing the resurgence of Somali piracy in the region. The deployment of its frontline ships and surveillance aircraft for maritime security operations in the Arabian Sea has ensured the safety of commercial traffic transiting through some of the busiest, most critical, and most threatened sea lanes in the world.

During the piracy crisis off Somalia in 2008, various mechanisms had been established to develop a coordinated approach, and navies, whether operating as part of a multilateral mechanism or individually (like India) had been able to develop a coordinated response to tackle the problem. Many of these are still active, though their engagement may have diminished since the decline in piracy. One of the most effective of these is the 'Shared Awareness and Deconflicting' mechanism (SHADE), which is an informal grouping of navies that was set up by the CMF and the EU.¹⁴ Since the framework still exists, it should be revived to address the current threat from maritime terrorism and piracy. The recent focus on information sharing to enhancing maritime domain awareness for addressing the multitude of non-traditional and transnational threats in the Indian Ocean region has led to additional mechanisms like the Information Fusion Centres across the Indian Ocean (including the IOR-IFC

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located in Gurugram, India). Similarly, the Maritime Security Centre Horn of Africa, (MSCHoA) provides information and is also connected to the operating navies The UK's Maritime Trade Office (UKMTO) has been very active in the current crisis in providing information on piracy attacks. The European Union-led capacity-building initiative CRIMARIO I (Critical Maritime Routes Indo-Pacific),¹⁵ established in the western Indian Ocean in 2014 has greatly enhanced information-sharing through its IORIS (Indo-Pacific Regional Information Sharing) platform¹⁶ which has linked many smaller regional mechanisms to offer a comprehensive picture.

Strategic Impact on India

From an Indian geopolitical perspective, the maritime dimension of this conflict will impact some major initiatives that have been taken in the recent past to engage more actively with West Asia. India's relations with the countries in the region are at their best ever, which need to be consolidated. The four-nation I2U2 mini-lateral (India, Israel, UAE, USA)¹⁷ focussing on multi-dimensional security including human, energy, food climate etc has the potential to become a driver for a secure order in the region. In fact, it is also being referred to as a Middle East Quad.¹⁸ During the G20 Summit held in New Delhi in September 2023, Prime Minister Modi launched the India-Middle East-Europe (IMEEC) corridor linking India to Europe through sea-land-sea connectivity.¹⁹ While it is being described as a counter to China's BRI, it is in fact a very significant geo-economic development in its own right. IMEEC is still at a very nascent stage so it is hoped that its further development is not stymied by the current conflict. The third important Indian initiative to consolidate its strategic presence in the region is the development of Iran's Chahbahar port which India has been progressing with Iran. This is also linked to the INSTC (International North-South Transport corridor) connecting Central Asia to the Arabian Sea.²⁰ The success of these projects will lie in India's ability to address the security challenges and the political divergences between various stakeholders.

Conclusion

The current Israel-Hamas conflict is showing very little signs of abating. In fact, it runs the risk of further escalation, particularly in the Red Sea-Gulf of Aden region. The simultaneous emergence of maritime terrorism and the resurgence of piracy is a matter of concern; the disproportionately major response of navies to contain it emphasises the gravity of the threat. The economic impact of this

conflict is already being felt on the global economy and will spiral exponentially if the smooth flow of global trade and energy continues to get disrupted. This is also not the first time that a non-traditional threat has posed such a risk to the global economy and it will not be the last. Securing the global commons is a public good. Hence the world has to put aside its narrow differences and parochial national interests and must develop a coordinated multi-dimensional, multi-layered and multi-national effort to curb this and other emerging threats to the international order at sea.

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SCHOLAR WARRIOR

SECTION III

INTERNAL
SECURITY &
THE REGION

CENTRE FOR LAND WARFARE STUDIES

On Iran-Pakistan Rapprochement

NILESH KUNWAR

Abstract

Iran and Pakistan have chequered relations which is a natural consequence of the two countries being across the Shia-Sunni divide. There have been periodic episodes of tension between them since militant groups of either country find sanctuary and support in the other country. Tension escalated to an unprecedented level on 17 January 2024 when Iran struck across the border into Pakistan's southwestern Baluchistan province. Tehran's justification for its action was that it had hit a hideout for the anti-Iran armed group Jaish al-Adl (the Army of Justice). After Pakistan's tit-for-tat strike into Iran, tensions have been quickly checked for now. This article is an assessment of these recent tensions and how they affect the region.

Introduction

With both Tehran and Islamabad quickly striking a reconciliatory note after the recent cross-border strikes against each other, the danger of the situation spiralling out of control has been effectively attended to and what could have been a disastrous war, has been averted. The Iranian Foreign Minister Hossein Amir Abdollahian's timely Islamabad visit and the mutual decision to establish a joint coordination mechanism at the foreign minister level hold promise that Iran-Pak relations are back on track.¹ One wishes that all remains well between these two neighbours. However, given the convoluted relations between Iran and

Pakistan, it would be a bit too early to conclude that the current display of bonhomie would endure. This is because nothing new has emerged during the Iranian foreign minister's meeting with the Pakistan army chief, as promises of respecting each other's territorial sovereignty and jointly fighting terrorism have been made several times in the past.

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Iran-Pakistan Relationship

Iran-Pakistan relations have been largely cordial, but have experienced patches of rough weather from the late seventies onwards. In July 1977, the then Pakistan army chief, General Zia-ul-Haq, deposed Prime Minister Zulfikar Ali Bhutto in a coup and announced his firm decision to introduce sharia law in the country. A staunch Sunni Muslim, Zia believed in the Deobandi doctrine and this greatly influenced the 'Islamisation' of Pakistan.

While this was going on, Pakistan's Western neighbour was witnessing the bloody 1979 Islamic revolution that saw Reza Shah Pahlavi being replaced by the ultra-conservative Twelver Shia Cleric, Ayatollah Ruhollah Khomeini, and the emergence of a theocratic Shia state.

Both Zia and Khomeini wisely avoided direct sectarian confrontation. However, making religion supreme in the affairs of the state had a cascading effect amongst both the majority Sunni and Shia communities in Pakistan and Iran respectively, resulting in hardened religious positions. The Iran-Pakistan sectarianism chasm came out in the open during the fourth Afghan civil war between the Afghan Taliban and Northern Alliance (1996-2001). While Pakistan backed the Sunni-predominant Afghan Taliban, Tehran supported the largely Shia Northern Alliance. Relations between the two countries deteriorated further after the capture of Mazar-i-Sharif in 1998, as Pakistan-backed Taliban murdered ten Iranian officials posted at the Iranian consulate as well as an Iranian journalist, and perpetrated genocide of Shias.

The Human Rights Watch (HRW) report on this incident states, "Taliban forces carried out a systematic search for male members of the ethnic Hazara, Tajik, and Uzbek communities in the city. The Hazaras, a Persian-speaking Shi'a ethnic group, were particularly targeted, in part because of their religious identity [...]."² Another 2001 HRW report reveals that "Official denials notwithstanding, Pakistan has provided the Taliban with military advisers and

Islamabad glibly parrots its unsubstantiated allegations of the Indian spy agency, the Research and Analysis Wing (RAW), patronising Baloch separatists. However, by now claiming to have targeted anti-Pakistan Baluchistan Liberation Army (BLA) bases on Iranian soil during its January 18 air strikes, Islamabad has completely demolished its own crafted narrative.

logistical support during key battles.”³ Hence, in spite of Islamabad’s denial, it is inconceivable that the Taliban would have targeted Iranian consulate members and a journalist without explicit sanction from their Pakistani advisors.

Trading Charges

Islamabad and Tehran have been accusing each other of providing the Baloch terrorists safe sanctuaries on their soil, but both countries outrightly reject this allegation. However, it’s no secret that while Iran is believed to have links with a host of terrorist groups throughout

the Middle East⁴, Pakistan too is known to be patronising various terrorist groups operating in India, Afghanistan and Iran⁵. Islamabad glibly parrots its unsubstantiated allegations of the Indian spy agency, the Research and Analysis Wing (RAW), patronising Baloch separatists. However, by now claiming to have targeted anti-Pakistan Baluchistan Liberation Army (BLA) bases on Iranian soil during its January 18 air strikes, Islamabad has completely demolished its own crafted narrative.

Pakistani Involvement

It could be argued that while Tehran and Islamabad may have their differences, their relations aren’t so bad that it compels Pakistan to sponsor anti-Iran terrorist groups. While this inference has merit, there’s nothing completely ‘black’ or absolutely ‘white’ in the murky cloak-and-dagger games that countries play. A peep into Pakistan’s army’s record of ‘secret wars’ will reveal Rawalpindi’s incurable propensity for sponsoring terrorist groups to serve as ‘strategic assets’ for waging proxy wars against neighbours.

It’s no secret that the Pakistan army has been providing safe sanctuaries to anti-Iran Jaish-ul-Adl (JuA) fighters on Pakistani soil. While much is being made out of the January 16 cross-border airstrike by Tehran against JuA, the fact is that this isn’t the first time such a thing has happened. In November 2013, Pakistani media reported that a “rocket” fired from Iranian territory had hit three houses in Kulahu village of Kech District Balochistan, belonging to the high-ranking JuA

commander Mullah Omar Irani and his close relatives.⁶ Though Tehran didn't mention anything about this air strike since JuA had claimed responsibility for the killing of 15 Iranian Border Guards just two months earlier, it's obvious that Irani was the prime target of this cross-border rocket attack, but he survived. Islamabad, however, played down this incident probably as it feared that this attack could draw international attention to terrorist sanctuaries on Pakistani soil. Irani served as ISI's faithful minion and on its directions, even carried out the abduction of retired Indian Navy officer Kulbhushan Jadhav from the Chabahar area of Iran and handed him over to the Pakistan army's spy agency.⁷

However, when the lid over Jadhav's abduction blew off, there were apprehensions within ISI that the Indian spy agency RAW could 'snatch' him and let the world know the truth about Jadhav through the horse's mouth. So, when the JuA commander and both his sons were killed in an alleged encounter by Pakistani security forces in 2020, no one was surprised. The fact that Tehran never expressed its gratitude to Islamabad for eliminating one of Iran's most wanted terrorists indicates that it was aware that Jadhav was actually kidnapped from within Iran and this had caused immense diplomatic embarrassment!

There's substantial evidence of ISI helping anti-Iran terrorist groups at the behest of countries like the US and Saudi Arabia who wield compelling influence over Pakistan. A 2007 news report cites several sources confirming that "CIA officials are understood to be helping opposition militias among the numerous ethnic minority groups clustered in Iran's border regions" to conduct "controversial" operations "dealing with movements that resort to terrorist methods in pursuit of their grievances against the Iranian regime."⁸

A year later, renowned award-winning investigative journalist Seymour M Hersh revealed that "the covert activities [of CIA in Iran] involve support of the minority Ahwazi Arab and Baluchi groups and other dissident organizations," endorsing The Sunday Telegraph news report. He also mentions that "Many of the activities may be being carried out by dissidents in Iran, and not by Americans in the field," and that "one problem with 'passing money' [...] in a covert setting is that it is hard to control where the money goes and whom [sic] it benefits."⁹

Conclusion

It thus emerges that by using ISI as a conduit for "passing money" received from the CIA to anti-Iran terrorist groups, Pakistan is not only earning Washington's goodwill but also getting an opportunity to siphon off substantial amounts from these secret funds and utilise them for its other covert activities, just like it did in

Being over-obsessed with Iran's covert nuclear programme, the international community doesn't take Tehran's accusation of Pakistan's involvement in fuelling terrorism in Sistan-Baluchistan seriously.

Afghanistan. Being over-obsessed with Iran's covert nuclear programme, the international community doesn't take Tehran's accusation of Pakistan's involvement in fuelling terrorism in Sistan-Baluchistan seriously. This makes it a win-win situation for Rawalpindi and so, there are all the reasons for ISI to facilitate US-disruptive activities along the Iran-Pakistan border. Hostility between Saudi Arabia and Iran is apparent from the ongoing proxy wars in Yemen and Syria. Pakistan is a major recipient of aid from Saudi Arabian and hence ISI is playing ball by sponsoring anti-Iran terrorist groups like JuA to keep its benefactor in good humour. So, while Iran and Pakistan may put up a show of unbounded affection, make promises and sign agreements, Rawalpindi's insistence to fish in troubled waters will do little to either allay Tehran's apprehensions or change the security situation in the Sistan-Baluchistan province of Iran. India should be well aware of these dynamics to ensure that its relations with Iran and actions with respect to Pakistan are progressed keeping these factors in mind.

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Securing the India-Myanmar Border: Case for a Proactive Trans-Border Approach

SUBIR BHAUMIK

Abstract

India's decision to end the Free Movement Regime on the 1643 km border with Myanmar and erect a barbed wire fence like the one on its border with Bangladesh and Pakistan, has given rise to many debates. The writer of this article maintains that the fence itself is not enough to secure the difficult border and argues that a more proactive approach is needed to tackle cross-border insurgencies and check both illegal migration as well as drugs and weapons smuggling, rampant on this border. A consistent trans-border quasi-interventionist posture is needed to aggressively protect Indian interests.

Introduction

India has announced an end of the Free Movement Regime (FMR) on the 1643-km--long border with Myanmar which is mostly hilly and covered with tropical jungles. The FMR was introduced by the British after they separated the administration of India from Myanmar (then Burma). It was formalised by the Modi government in 2018 as part of its 'Act East' outreach that sought to situate the country's underdeveloped Northeast in its overland engagement with East

and Southeast Asia. That was seen as a key to the future economic growth of the far-flung region ravaged by five decades of violent ethnic insurgencies. The Modi government has said that it is fencing the entire border with Myanmar. This provoked angry reactions from political parties in Nagaland and Mizoram and ethnic groups such as the Kukis in Manipur.

The proposed erection of a barbed wire fence on the India-Myanmar border was welcomed by the Meiteis, the majority community of Manipur who resent Kuki-Chin and Naga in-migration into the erstwhile princely state.

Reactions to and Consequences of Fencing

Home Minister Amit Shah's announcement on ending the FMR and the proposed erection of a barbed wire fence on the India-Myanmar border was welcomed by the Meiteis, the majority community of Manipur who resent Kuki-Chin and Naga in-migration into the erstwhile princely state. The Home Minister stated on X (formerly Twitter) that "the Modi government is committed to building impenetrable borders. It has decided to construct a fence along the entire 1643-kilometer-long Indo-Myanmar border. To facilitate better surveillance, a patrol track along the border will also be paved."¹ The Indian government has already fenced a 10 km stretch in the Moreh region of Manipur. Two pilot projects of fencing through a hybrid surveillance system are also under execution. The Home Minister, clarifying the planned fencing work, also tweeted "They will fence a stretch of 1 km each in Arunachal Pradesh and Manipur. Additionally, fence works covering approximately 20 km in Manipur have also been approved, and the work will start soon."² Interestingly, Bangladesh, which had often raised objections to a similar fence that India constructed on its border, has supported Delhi's decision to fence its border with Myanmar. The Bangladesh Foreign minister has said that India's move to fence its border with Myanmar will help the region, given the unrest in that country. He said this after meeting National Security Advisor Ajit Doval during his February 2024 visit to Delhi, as he reiterated Dhaka's request for New Delhi's assistance in repatriating Rohingya refugees.³

This exemplifies the contrasting pull factors that influence India's border management strategies in the East, where there is no hostile neighbour like Pakistan but where similar problems like cross-border insurgencies, drugs and weapons smuggling and worrisome population movements exist. India's decision follows eight months of intense ethnic conflict between Meiteis and Kukis in Manipur and a huge inflow of refugees (mostly ethnic Kuki-Chins) from

After a string of embarrassing military defeats at the hands of rebel forces, the ability of the junta to hold onto much of Myanmar's territory is in question.

Myanmar after a huge spurt in fighting following the military offensive by a plethora of ethnic rebel armies seeking to topple the Myanmar military junta.

This has brought to the fore India's contrasting challenges in handling the India-Myanmar border. On one hand, is the challenge of developing the Northeast through increasing border trade and promoting overland connectivity to the Tiger economies of Southeast Asia. Paradoxically, at the same time India seeks to insulate itself from the fallout of Myanmar's festering civil war, curbing cross-border insurgencies by battling ethnicities and lowering the rising graph of contraband trade in narcotics drugs and weapons, the latter mostly of Chinese origin, by putting barriers in the path of connectivity.⁴

It may be argued, as some, like this writer, as well as the former Indian ambassador to Myanmar Gautam Mukhopadhyay, have said, that the Modi government's exercising the obvious option of fencing the India-Myanmar border to secure it from cross-border insurgencies and illegal migration is not merely in keeping with its perceived threat of adverse demographic impact on a fragile polity but also exemplifies failure to control the ethnic explosion in Manipur and to play a meaningful role in kickstarting a peace process in Myanmar where it was uniquely placed to do so because of its links and credible image with all stakeholders including the Tatmadaw (The Myanmar Army), the ethnic rebel groups and the democratic parties including the parallel National Unity Government (NUG) run by them.⁵

Look beyond Junta and Fence

After a string of embarrassing military defeats at the hands of rebel forces, the ability of the junta to hold onto much of Myanmar's territory is in question. Across Myanmar's border provinces, where a host of ethnic rebel armies have won a string of military victories since the 1027 offensive began in November 2023, the Rakhine scenario has been repeated with Tatmadaw soldiers deserting to join the resistance or surrender to rebel forces, or fleeing into India, Bangladesh and China.⁶ The northern groups like the Myanmar National Democratic Alliance Army (MNDDA) and Ta'ang National Liberation Army have even taken control of border trade outposts threatening the closure of the thriving Sino-Myanmar border trade. Though China is the biggest backer of the Myanmar junta, it wasted no time in brokering a truce between the rebels and the Myanmar army, because

Beijing has influence over both. The contrast to India's predicament in Rakhine cannot be sharper.

India did issue a general statement in December appealing to the military junta to initiate a dialogue with the rebel groups and Myanmar's National Unity Government made of ethnic Burman resistance groups (like the People's Defence Forces) to restore a federal democracy in the country. What it failed to do was take a proactive peace mission to Myanmar and leverage India's access and credibility with all major stakeholders to push through a peace process.

"Exactly three years after the February 2021 coup that blocked an elected government from taking power, Myanmar's oppressive military junta seems to be falling apart, with pressures mounting on its supremo Senior General Min Aung Hlaing to step down to pave the way for comprehensive national reconciliation and a return to democracy [...]. Online, pro-military journalists and bloggers have launched similar tirades against General Hlaing in the past two weeks as the Myanmar military, [the] Tatmadaw, lost control of nearly 40 towns to ethnic rebel armies."⁷

Sources from within the Tatmadaw, who do not wish to be identified, convey that moderate senior officers looking to stop the string of military defeats are pitching for Senior General Soe Win to take over. In addition, the former Myanmar military intelligence chief General Myat Tun Oo and former Home Minister Soe Htut are at the forefront of the anti-Hlaing faction which has the backing of most mid-ranking officers who feel Hlaing resorted to the February 1, 2021 coup when his presidential ambition was blocked by the victorious National League for Democracy led by Nobel laureate Aung San Suu Kyi.⁸

It is time that India considers the degree of support it extends to the military junta since the ground realities have dramatically changed in the past four months. Anthropologist-historian Willem Van Schendel, author of some highly acclaimed works on the region, during an interview by the author stated that, "It is far too early to say that the junta is on the way out. The alliance of insurgent groups is still fragile, and only speedy and continuous victories can keep it going."⁹

However, the insurgents are likely to have better control of the border areas. A number of India-sponsored connectivity projects to link India's Northeast to mainland Southeast Asia pass through these areas. If these projects can't be operationalised, India's "Act East" will remain a mere cliché. Consequently, the effort to situate the underdeveloped Northeast, at the heart of India's engagement with Southeast Asia, that the P. V. Narasimha Rao government had initiated with such single-minded focus, will get nowhere. A stable and peaceful Myanmar

In view of the Myanmar junta's failure to hold territory, India needs to consider engaging the ethnic rebel armies and the People's Defence Forces (aligned to NUG).

with a functioning democracy holds the key to India's Act East through the Northeast. India's strategic inaction to support a peace process in Myanmar may cost it dear.

If the experience of the border fence on the India-Bangladesh border is an indication, fencing the India-Myanmar border with as difficult a terrain, will not only be time and

resource-consuming but such fencing often fails to meet the goal of securing the country fully from threats such as drug and weapon smuggling. While it might, when completed, help curb the movement of transborder insurgents, it may also hinder the Act East thrust.

Proactive Steps to Safeguard India's Interests

Even if India persists with its plans to fence the India-Myanmar border it is more important to take three more proactive steps to secure it. These are as under:

- In view of the Myanmar junta's failure to hold territory, India needs to consider engaging the ethnic rebel armies and the People's Defence Forces (aligned to NUG)—like China has done—to ensure they don't shelter and support anti-Indian insurgents or promote drugs and weapons smuggling, as the Tatmadaw is no longer in a position to curb such activities which harm India. If China can arm and support both the Myanmar military junta and the United Wa State Army (an offshoot of the now-defunct Myanmar Communist Party), India should be able to balance working relationships with the military junta and simultaneously cultivate the Kachin Independence Army, the People's Defence Forces (Sagaing), the Chin National Front and the Arakan Army. In the 1986-1994 phase, India's external intelligence RAW closely liaised with, and supported the Kachin Independence Army to block the China trek route of the northeastern rebels in a successful covert operation run by the late B. B. Nandi, RAW Additional Secretary (East). Nandi, after retirement, shared details of Operation Kachin and explained the value of "a covert presence inside Myanmar territory" that blocked the north-eastern rebels from reaching China and the military junta to cooperate by initiating counter-insurgency operations in Sagaing which they avoided until that time.¹⁰ India has upset the Arakan Army by initiating "Operation Sunrise" in two phases against its bases on the Mizoram border in 2019-20¹¹, after which the rebels attacked contractors involved in works

on the India-financed Kaladan Multi-Modal Transport (KMMT) project. Now, with the Arakan Army in full control of Paletwa, a key river-road junction on the KMMT route, there is no way India can operationalise it without dealing with the Arakan Army whose chief of publicity Khaine Thukkha told this writer recently that “We are upset with Indian operations on Mizoram border and we don’t trust India after it betrayed and murdered the leaders of National Unity

Party of Arakans (NUPA) in 1998.”¹² He made it clear that if India wants to use the KMMT route to connect to Mizoram, it will have to negotiate a fresh deal with the Arakan Army which, he claimed, now controls much of Rakhine and a large part of the Chin state (through which the KMMT route passes). India should not only maintain working relations with rebel groups but should also covertly fund and liaise with future lawmakers in these border provinces to preserve and take forward its core interests as the Chinese do.

- India should take advantage of the chaos in Western Myanmar where Tatmadaw is under heavy military pressure from PDF in Sagaing and from other ethnic rebels in Kachin, Chin and Rakhine states to neutralise long-maintained Northeast Indian rebel bases in Myanmar, like in Sagaing’s Ta Ga region. The United Liberation Front of Asom (ULFA)’s independent faction led by Paresh Barua has recently alleged one such strike but more would be required to cripple their ability to strike power across the border. This will also put greater pressure on the rebels to come to the table.¹³ India should also strike down the 11-18 drug processing factories (in Sagaing, Kachin and Chin states) run by several Myanmar cartels (Wei brothers, Lo Hsin Nian, Zhang Zhi Min Ming, Ah Hua)¹⁴ who have so far enjoyed close links with both the Tatmadaw and with Meitei and Kuki cartels in Manipur.¹⁵ This is crucial to checking the rising drug trade which may, if unchecked, lead to unacceptable drug-based funding of political activities in frontier states.
- India needs to maintain the FMR in a regulated manner through checkpoints. This will not only allow transborder ethnicities to connect but also monitor development/connectivity projects in border regions that help operationalise ‘Act East’ and provide adequate intelligence for

India needs to maintain the FMR in a regulated manner through checkpoints. This will not only allow transborder ethnicities to connect but also monitor development/connectivity projects in border regions that help operationalise ‘Act East’.

proactive operations to secure national security objectives. Funding and operationalising critical infrastructure like roads, bridges and waterways as well as promoting joint venture investments in border areas like Myanmar's Naga Self-administered Region is crucial to get local opinion in favour of India and against the north-eastern rebels sheltered there. This is critical for the effective denial of sanctuaries to the rebels like (National Socialist Council of Nagaland) NSCN or ULFA and a better option than just waiting behind a fence for the rebels to attempt a crossover.

Conclusion

The pursuit of these three measures will enable India to defend the Myanmar border more effectively and dynamically by encouraging proactivity rather than getting into a defensive “behind the fort walls” mentality that may breed complacency and even corruption in border management. Beijing has been worried over the 1027 offensive launched by the Brotherhood Alliance leading to the closure of entry points that must remain open and unaffected to maintain the rising momentum of the lucrative bilateral trade between the two neighbours. To alleviate its worry, it has taken considered steps. These include prevailing upon important ethnic armed organisations (EAOs) to cease military action and to reduce support for the NUG and its poorly armed and trained People's Defence Forces (PDFs). In this manner, China may be helping the regime achieve its key strategic objectives, but it is doing this keeping its interests in mind as the NUG is seen as West-leaning. Taking a cue from China India too must be proactive and unhesitant in keeping its security and national interests in mind.

Subir Bhaumik is a former BBC and Reuters correspondent and author of five books on India's Northeast and its volatile neighborhood. Views expressed are personal.

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SCHOLAR WARRIOR

SECTION IV

TECHNOLOGY,
WEAPONS, DEFENCE
ACQUISITION

CENTRE FOR LAND WARFARE STUDIES

Indigenisation in the Defence Sector: A Path to Modernisation and Self-Reliance

DUSHYANT SINGH

Abstract

This article aims to highlight the status of India's quest for self-reliance in technological advancement and measure the distance that is yet to be covered. It carries out an assessment of the realities of Indian Defence Capital expenditure and the initiatives being taken to set up Defence Manufacturing Corridors. Lastly, it gives recommendations for indigenisation, corporatisation and incentivisation with a view to enhancing self-reliance in an era when wars and sanctions can disrupt supply chains.

Introduction

The onset of 6th Generation Warfare, apart from blurring the lines between war and politics, has encompassed technological advancements in a big way. The Covid Pandemic has very well brought out the importance of being self-reliant in various sectors of a nation's economy. The concept of self-reliant India or *Atmanirbhar Bharat* became popularised in 2020, although it has been floating in the environment since 2014.

The two most recent wars viz., the Russia-Ukraine War and the Israel-Hamas War have unfortunately shown the 'profound impact' of this technological advancement. The fundamental change in the character of war is being driven by advances in sensors, robotics and Artificial Intelligence (AI) that give nations the ability to go through the Observe, Orient, Decide and Act (OODA) loop at an ever-increasing speed. India without being unduly wary about either of its two neighbours on the Western Front and especially the Northern

Front, should remain conscious of the threat that they pose to its national security. This calls for all-time operational preparedness of India's armed forces along with training in emerging and niche technologies like AI, quantum computing, etc., that will ultimately shape the future battlefields. In the words of General Mark Milley, a former Chairman of the US Joint Chiefs of Staff: "Your success and the success and the survival of your nation will depend on how well we, all of us collectively, take advantage of these technologies and how we optimize them for use in the military."¹

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Indian Defence Forces: Equipment Profile

The concept of *Atmannirbhar Bharat* (from 2014 onwards) aims to shift the weight from India being an 'import intensive' to a self-reliant country, that would work in India's favour in the long run and strengthen India's National Security. Modernisation of the armed forces is directly proportional to the state-of-the-art equipment and weapons procured. As per the Chief of the Army Staff (COAS) of the Indian Army, the Indian Army is currently holding around 41 percent vintage, 15 percent State-of-the-Art (SoA) and 44 percent current-generation equipment and weapons. The target being to have 22 percent vintage, 43 percent SoA and 35 percent current by 2030.² Therefore, if India has to be a credible middle power, then it must have a modernised armed force. As per the Stockholm International Peace Research Institute (SIPRI), India remains one of the top arms importers, owing to its tensions with China and Pakistan.³

Realities of Capital Expenditure Allocation

The modernisation of the defence forces is dependent on the allocation of capital budget. Due to several reasons, the army generally gets the least share in percentage terms for capital expenditure. Some of the reasons are huge revenue expenditure on pay and pensions, inability to spend the allocated funds for capital procurement due to bureaucratic procurement processes, relatively larger amount of funds needed for procurement of Air Force and Naval large and costly platform-based systems. If this trend continues then in the long-term this may adversely impact the weapon and equipment profile of the Army. It is also imperative that the increase in Army Capital Fund allocation should not be at the cost of the AF and the Navy. This trend needs to be rectified through greater allotment of funds, focused and smart procurement, and effective weapon and equipment development strategies. Hence, the answer lies in promoting indigenisation, encouraging R&D, supporting the MSMEs/SMEs, and giving space to private and public sector partnerships. Towards this end, the two Defence Industrial Corridors viz., in Uttar Pradesh and Tamil Nadu⁴ must be promoted rapidly if India wants to meet the target of indigenisation and modern technology-driven defence systems in an earlier time frame.

Figure 1: Defence Expenditure as a Share of GDP and Overall Expenditure

Proposed Budget Allocation to Indian Ministry of Defence (MoD) as a % of GDP and Total Central Government Expenditure				
Year	Proposed Defence Budget (INR tr)	Total Central Government Expenditure (INR tr)	Proposed Defence Budget as % of GDP	Proposed Defence Budget as % of Total Central Government Expenditure
2023	5.94	45.0	1.93	13.2
2022	5.25	39.4	1.92	13.3
2021	4.78	34.8	2.02	13.7
2020	4.71	30.4	2.38	15.5
2019	4.31	27.9	2.15	15.5
2018	4.04	24.4	2.14	16.6
2017	3.60	21.5	2.11	16.8
2016	3.41	19.8	2.21	17.2
2015	3.10	17.8	2.25	17.4
2014	2.85	17.9	2.29	15.9
2013	2.53	16.7	2.26	15.2

Source: IISS Military Balance+ Database; Government of India Union Budgets (2013-2023).

The table above indicates the fact that the allocation of the defence budget is increasing at a steady pace. For instance, in 2023, the proposed defence budget stood at INR 5.94 trillion as compared to 2022 which was INR 5.25 trillion. Although the percentage of the defence budget compared to total budget outlay and GDP has reduced, we must also consider the fact that our kitty of funds has enlarged. Our GDP in nominal terms has increased from USD 3.72 trillion to USD 13.72 trillion in PPP terms. Therefore, the fund availability has increased.

However, if we have to look at the increase in funds in real terms, it is very limited. The problem of capital acquisition has been further accentuated due to pay & allowances and pensions. The pension budget in 2008 was 12 percent of the total outlay and has reached above 20 percent, the latest being 23 percent in 2023. This is to say that, the notable increase in top-level defence budget disguises the impact on procurement and R&D expenditure. The relative decline in defence funding against central government expenditure and the pressures caused due to pay and allowances and pensions severely constrain the investment in modernisation within the defence budget. This combined with bureaucracy and slow procurement processes, acts as a brake on modernisation.

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Challenges in Indigenisation

The defence industry is fraught with challenges that create hurdles in the path to indigenisation. These are as given below:

- **Urgency due to Operational Requirement.** Due to the large quantity of vintage equipment, there is an urgent requirement for replacement. A long development cycle precludes indigenous replacement, forcing Services to resort to the import route.
- **Bureaucratic Hurdles.** Exhaustive bureaucratic channels delay the procurement process and create a communication gap between the involved stakeholders. Delay in issuing licenses coupled with long lines for procuring permission letters, leads to disturbances in the demand-supply curve.

The importance of indigenisation cannot be over-emphasised. To keep one's defence assets safe, India must reduce its reliance on imports and promote exports.

- **Inter-Services Competing Demands.** Lack of synergy between the armed forces in procurement of equipment and weapons further exacerbates the challenge of defence procurement.

- **Discontinuity of Staff.** Short tenures due to organisational pressures in procurement appointments leave a gap in understanding and

efficiently pursuing the progress of procurement, which creates a delay as the new incumbent takes time to figure out the details of the case.

- **PSUs and Private Sector.** Due to over-burdening, the efficiency of PSUs becomes questionable and slow progress of privatisation leaves little room for fast procurement and induction of required weapons.

Weapons and Equipment Development Challenges

These are as given below:

- **Research and Development.** Investments in R&D need to be increased. The focus should be placed more on innovating advanced models of equipment that fall in place with emerging technologies.
- **Slow process.** DRDO's routine approach to innovation and development is a slow and cumbersome process.
- **Tender.** The exhaustive process of the L1 bidder coupled with a lack of understanding of the QRs as well as No cost No commitment (NCNC) development and trial process inhibit development agencies from bidding. Hence, options for procurement become limited.
- **Export.** The government must encourage and facilitate the defence industry to go in for export-oriented development and design. Care should also be taken to ensure that export products meet the expectations of the buyer and enhance the trust in one's capabilities to become a manufacturing hub.
- **Unclear Standard Operating Procedures (SOPs).** The lack of properly written down SOPs to take up development projects with government agencies makes the flowchart unclear leaving space for confusion and consuming an inordinate amount of time.

Addressing Requirements

The importance of indigenisation cannot be over-emphasised. To keep one's defence assets safe, India must reduce its reliance on imports and promote

exports, which would generate a healthy GDP and ultimately contribute to the development of India's economy and increase India's military prowess. Encouragement of indigenisation through R&D, MSMEs/SMEs and Public-Private Partnership would bring about a positive change in the defence industry.

Recommendations

Measures for Indigenisation

- **Research and Development (R&D).** R&D, apart from being a critical factor in Defence indigenisation, is a cost-intensive domain. Realising its importance, steps such as tax relief/providing financial incentives could be considered so as to reduce the financial burden on the industry venturing into it and encouraging more such investments.
- **Basic Infrastructure.** Infrastructure development should be paid attention to especially when it comes to R&D. The State Governments of Uttar Pradesh and Tamil Nadu must focus on expediting the development of the Defence Industrial Corridors. In this regard, the industry, especially the private sector, in conjunction with academia and government nodal agencies should establish specific facilities. The UP and Tamil Nadu governments have already started working towards it, but the work needs to be expedited if we want to become a significant power by 2047, the 100th year of our independence.
- **Testing the Infrastructure.** This is a major aspect of the development of defence weapons and equipment. Firing ranges for testing munitions need to be created/made available to private enterprises under the aegis of Central and State Governments. The quantum of testing facilities especially high technology labs that are NABL accredited, need to be created in large numbers and provided to the private industries. In the interim, there is a need to create virtual/augmented reality-based labs for testing and validation.
- **Lower-level User Developer Interaction especially for the Startups.** Entrepreneurs working on area-specific defence requirements should be encouraged and allowed to visit and spend time in the environment for which the weapons/equipment/system is required to be produced. However, while doing so, security concerns need to be kept in mind and guard rails laid down. In fact, a liaison cell at the MoD should be created wherein a

particular industry may seek support to study the area and interact closely with the user in order to better understand the user's requirements and also to get an idea of the operational needs.

- **Trials.** The trial duration of new items should be specified to avoid undue delay in the production process. Moreover, it should be ensured that the trial phase is conducted with full efficiency and each stage is studied carefully for trouble-shooting if required. The prototype development model may hasten up the development cycle.
- **Laying down of Standards and Facilitation of Exports.** A stringent system of certification needs to be created and followed to facilitate easier export of defence-related items. This system should progressively be developed to encourage self-certification.
- **Skill Development.** Some nodes of the defence corridors have been created in tier 3 or 4 cities like Aligarh, Chitrakoot and Jhansi which are not adequately endowed with skills needed for defence industries. Further, people living in tier 1 and 2 cities do not prefer relocating to such places unless the offered remunerations are high. Therefore, a greater emphasis on skill development with an aim to create a more efficient workforce needs to be considered. In the interim, a large skilled workforce available among the ex-servicemen should be utilized. In addition, major industries willing to provide manufacturing facilities in Defence Corridors should establish Centres of Excellence to reorient the skilled service-men to train their juniors.
- **Encouraging the Smaller Vendor.** There are several small vendors making components of international quality. However, at times their expertise cannot be exploited for big projects due to the cost factor/administrative issues related to reliance on multiple vendors for defence equipment. There is a need to explore cost-effective avenues to use available expertise as part of the *Atmanirbhar* initiative. Hand-holding of such vendors is the way ahead. Moreover, the vendors could be made aware of the set standards and pushed to maintain the same.

Cooperation and Incentivisation

- **Across Agencies Involved in Development and Manufacturing.** The *Atmanirbhar* initiative is investor-friendly and transparent. However, since it is still in the evolutionary stages, more frequent interaction between the government agencies/Service HQ involved and manufacturers will lead to

a better understanding of the requirements of both the user and the industry. Framing of realistic user requirements, like for example, the insistence of the users that one piece of equipment should be effective in all terrains, should be avoided as it is practically not possible to have one piece of equipment working effectively under widely varying conditions.

- **Incentivisation of Defence Corridors.** Defence Corridors, especially in UP, needs to be incentivised with tax breaks and hand-holding since they are going to be green field projects and MSMEs/SMEs do not have the capacity to sustain them alone.

The big players like Adani, Tata Defence, Kalyani needs to be encouraged to establish their manufacturing/ repair and maintenance base in these nodes and create the ecosystem for the MSMEs/SMEs to mushroom. In fact, as announced by TATA, they would be establishing their aircraft maintenance Repair and Overhaul facility at Jewar⁵ which, if successful, will create a new ecosystem that will cater for not only India but also for South and Southwest Asia. Establishment of similar facilities will go a long way in addressing sustainability of manufactured equipment.

- **Review of the No Cost No Commitment Concept (NCNC).** The NCNC concept involving design, development and manufacturing especially for major weapon and defence equipment is not sustainable. Foreign systems, such as those being followed in the US, need to be studied and the contracts awarded should be duly customised to the Indian condition requirements.
- **Level Playing Field between Big and Small Players.** The talent base in New India resides in the start-ups and smaller players but many face challenges of funding, including incubation centres. Hence, regular interactions must be held, and smaller players taken on board by the government agencies to disseminate the facilities and incentives available in the defence corridor that would also encourage the growth of small players.
- **Digital Sector.** For cyber, AI, and EW, we need one central agency to coordinate the activities of start-ups, which are mainly working in this field.

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Moreover, a dedicated skilled workforce is required to handle the digital sector especially when it comes to managing the digital footprint.

Positive Trends

In the last few years, especially in the light of the looming China threat, defence modernisation has been the focus of the Indian government, and under the banner of *Atmanirbhar Bharat*, substantial progress is visible. In November 2023, the Defence Acquisition Council (DAC) approved around 2.2 lakh crores (98 percent of the total AoN amount) worth of capital acquisition with respect to domestic industries.⁶ Additionally, Acceptance of Necessity (AoN) has been given for procurement of Area Denial Munition (ADM) Type-2 and Type-3.

In another boost to defence modernisation, the Army and the Air Force will be procuring 90 and 66 respectively of the *Prachand* light combat helicopters, thus adding to their existing strength of 15 (Army) and 10 (Air Force), which were inducted under the first INR 3887 crore contract inked in March 2022⁷. The *Prachand* helicopters will be manufactured by Hindustan Aeronautics Ltd. (HAL) and is capable of offensive operations in high-altitude areas like the Siachen glacier and eastern Ladakh.

Further, plans have also been approved for the procurement of 97 more Tejas fighters and the upgradation of 84 existing Sukhoi-30MKI jets, a huge boost for the indigenous defence industry.⁸ For replacing old Indian field guns, approval has been given to the Army for the procurement of 400 new towed artillery gun systems worth INR 9,900 crores.⁹ All the measures have been taken to keep India combat-ready to secure its national military security. Supplementarily, the expanding import embargo or the enhancement of the Defence Negative List is aimed at reducing India's dependence on foreign powers and also to provide a 'first line of defence' to its national security.

Way Ahead

It may be a promising idea to organise boot camps for all start-ups to understand the defence operating procedures for procurement and development of new systems. It may also be noted that while the ease of doing business may have improved quite considerably, but red tape and bureaucratic procedures still exist that discourage MSMEs/SMEs from undertaking work for Indian defence requirements. This aspect needs to be further addressed.

There is also a requirement to strictly maintain the timeframe within which a particular product needs to be delivered. For instance, under the first contract

of INR 8802 crore, 40 Tejas Mark I jets were to be delivered by HAL by December 2016. However, only 32 single seat fighters and two of the eight twin seater trainers have been delivered so far.¹⁰ HAL, therefore, needs to crank up its annual production rate to complete the delivery of 83 improved Tejas Mark I jets in the earliest possible timeframe.

Given the practice of advanced nations applying sanctions against their adversary as seen in the Ukraine and Iran conflict, one cannot rely on import dependent armed forces to fight future wars. In addition, imported equipment comes at an extremely inflated cost. Moreover, no country shares its top end technology with another nation while exporting defence equipment. Therefore, the equipment profile suffers qualitatively and financially. In addition, the war stamina of a nation is held hostage to other nations not only for the subsequent supply of equipment but in some cases for maintenance, repair, and operations. It is, therefore, prudent to lay emphasis on enhancing our indigenisation capabilities in the defence sector as much as possible and in a quicker time frame with fixed timelines.

Given the practice of advanced nations applying sanctions against their adversary as seen in the Ukraine and Iran conflict, one cannot rely on import dependent armed forces to fight future wars.

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Cyber Security Challenges to Command-and-Control Networks in Operational Battlefield

KPM DAS

Abstract

With the emerging strategic and tactical information systems along with inter-connected networks, cyber security has become a major factor in operational planning and mission outcomes. It is no longer confined to the strategic battlespace but now extends right up to the battle edge, casting its shadow over tactical systems, sensors and even battle platforms. In this context, this paper discusses the major cyber security factors impacting tactical levels of operations and discusses some architectural considerations, approaches, and recommendations to addressing this issue—the desirable state is that of cyber superiority on the battlefield.

Introduction

Cyber security is a collective undertaking requiring a coordinated approach aligned to the security strategy, and operational and tactical framework. “Contemporary tactical cyber defense activities are shifting towards proactive operations based on information sharing, threat intelligence, and layered

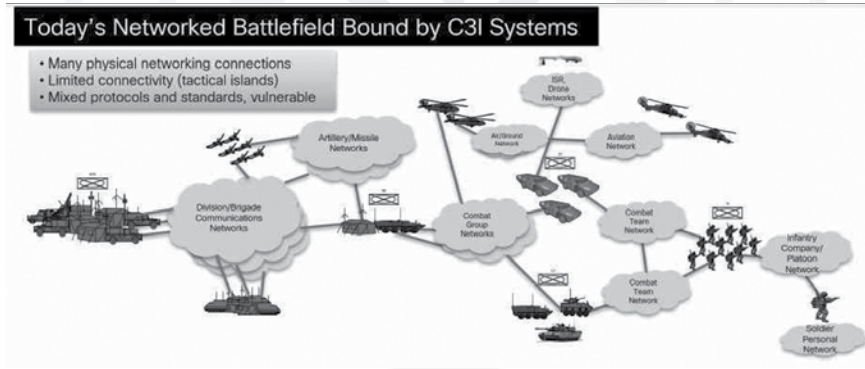
Contemporary tactical cyber defense activities are shifting towards proactive operations based on information sharing, threat intelligence, and layered protection that counter attacks across the entire threat spectrum.

protection that counter attacks across the entire threat spectrum. Pivotal to this approach is the utilization of network-centric defense capabilities in the Tactical Battlefield Area (TBA) to systemically uncover vulnerabilities, threats, and active compromise to achieve the fundamental goal of knowing your cyber information environment better than your adversary and dominating that environment as a corollary.”¹

TBA of the Present- From Analog to Digital

If you consider the intensely inter-networked battlefield that is emerging with the induction of sophisticated sensors, weapon systems and aerial platforms, the envelope of the TBA is highly digital. Figure 1 below shows just a slice of the TBA as it exists today.

Figure 1: The Inter-Networked Digital Battlefield



Cyber threats to national security are not solely confined to the strategic domain exposed to the 'Internet.' These advanced capabilities do represent real and significant risk for military operations, even in the TBA; consider the impact of real-time 'cyber' manipulation of the air picture within a Joint Operations Centre or adversarial infiltration of tactical sensor or command & control networks of the BSS (Battlefield Surveillance Systems).

Cyber security strategies vary across militaries to defeat these modern threats on the battlefield. The common best practice methods include the

need to coordinate cyber operations at the operational and joint-operations levels, foster information sharing between key stakeholders of the operational and tactical components of the three Services and enable infrastructure and operational resilience in critical functions (e.g., command & control networks, logistics). This responsibility and framework go well beyond the general staff and signals, and it is an operational and tactical problem that requires a holistic and harmonized solution.

With greater numbers of networked battlefield devices, the amount of information ‘generated at the edge’ is dramatically increasing. This data deluge not only challenges the ability to store, transmit, and analyse the data but also expands the security challenge from secure consumption to encompass secure generation.

Cyber Security Challenges in TBA Networks and Applications²

- **IP Networking.** The operational benefits of the convergence to IP networking in the TBA are key to modern warfighting capabilities. However, the stove-piped C3I systems model of the past did provide compartmentalisation and segmentation that limited the ability of attackers and malware to propagate. Tactical and strategic IP backbones need to provide policy-based smart compartmentalisation to minimise the cyber-attack surface.
- **Data Deluge.** With greater numbers of networked battlefield devices, the amount of information ‘generated at the edge’ is dramatically increasing. This data deluge not only challenges the ability to store, transmit, and analyse the data but also expands the security challenge from secure consumption to encompass secure generation. Rather than needing to trust a small population of centralised systems that could be relatively easily secured, now thousands of additional endpoints need to be trusted as sources of information.
- **Information Sharing.** The ‘need to share’ rather than the ‘need to know’ is driving new requests for data access, which historically have been outside system boundaries. These consumption endpoints are typically not dedicated for use within a single system hence system owners may no longer be able to enforce their security architecture to the edge device. System owners need a means to define their security policy requirements and rely on intelligent military networks to enforce and verify tactical edge security.

- **Complex Threats.** Modern cyber threats are becoming more complex as threat actors become increasingly sophisticated with substantial engineering resources at their disposal. Additionally, the reuse and weaponisation of malware are providing adversaries with cyber capabilities that they may not have the competency to develop themselves.

Operational Agility. Aligning defensive cyber operations with the pace of kinetic operations is another challenge. Kinetic operations can be unpredictable and hence the cyber architecture must be agile and malleable to support field operations, which sometimes lacks even in our C3I systems.

Cyber Security Challenges in Wireless Networks³

- **Channels.** Radio and wireless networking works on broadcast, which is far more vulnerable to eavesdropping and jamming than wired networks. Wireless networks are also more vulnerable to active attacks that exploit vulnerabilities in communication protocols.
- **Mobility.** Wireless devices are, in principle and usually in practice, far more portable and mobile than wired devices. This mobility results in several risks as they can be hacked/monitored more easily.
- **Resources.** Some wireless devices, such as smartphones and tablets, personal/manpack/vehicle radio stations, have sophisticated operating systems, but limited memory and processing resources to counter threats, including denial of service and malware.
- **Accessibility.** Some wireless devices, such as personal/handheld radio, sensors, Ground Control Stations (GCS) and robots, may be left unattended in remote and/or hostile locations. This greatly increases their vulnerability to physical attacks or manipulation.

A Cyber Security Capability Framework for the TBA⁴

For formations and signal units to achieve the threat-centric approach to cyber security, a multitude of capabilities and activities need to be enabled. Rather than architecting the interconnection of a large set of systems—each within its own independent cyber security capabilities derived from its own local view of exposures and threats in the battlespace—the Cyber Security Capability Framework (see Figure 2 below) proposes a singular view with visibility of the entire operational structure aligned to the vision of an integrated, pervasive IP battlespace.

Figure 2 outlines a capability framework that is broken into six areas to derive the core components of a layered defence-in-depth cyber system (incorporating people, processes, management, and technology). The logic of this framework can be consistently applied across the different operating domains within the Army (shown as fixed, deployed, and mobile/tactical), that are scaled to meet the unique technical, environmental and personnel demands of each domain.

Threat intelligence draws on the knowledge and visibility of other organisations and the security industry providing the benefits of the visibility of global threat sensory networks and vast analytic capabilities.

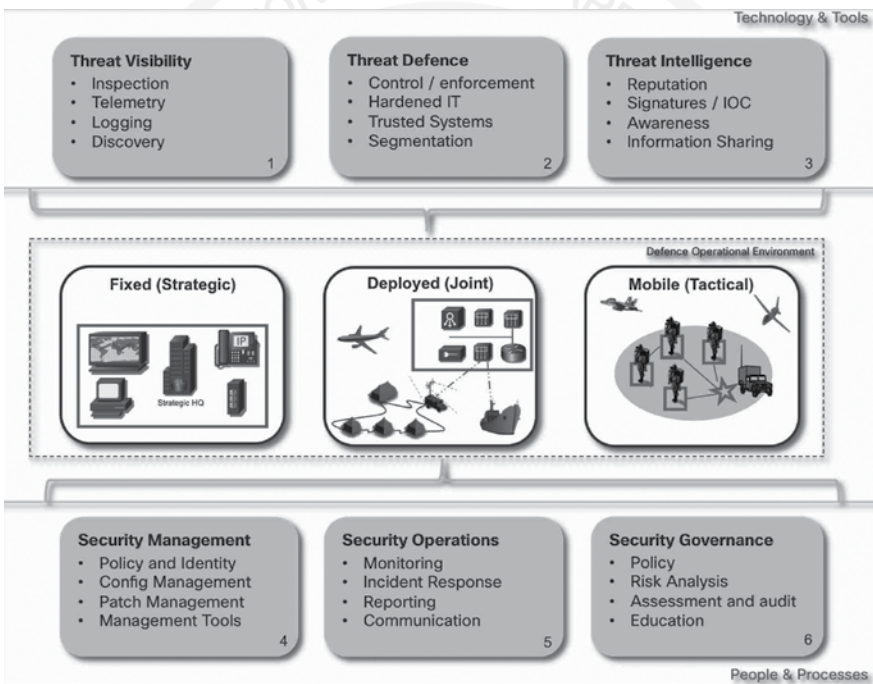
In a short outline, the six capability areas cover the following:

- **Threat Visibility.** All the capabilities that expose malicious cyber actors and their activities. This includes capabilities such as content inspection, network telemetry for behavioral analysis, all sources logging, and exception monitoring against established baselines.
- **Threat Defense.** Encompasses all the protections and mechanisms typically put in place before an attack. These include network, host and application access controls, hardened IT system configuration, trusted systems (known system integrity), segmentation and compartmentalization capabilities that can be applied dynamically by policy to simultaneously achieve both reduction in attack surface and flexible operations.
- **Threat Intelligence.** Most breaches are detected by an organisation other than that being breached.⁵ Threat intelligence draws on the knowledge and visibility of other organisations and the security industry providing the benefits of the visibility of global threat sensory networks and vast analytic capabilities. Intelligence is consumed in many forms such as reputation scores, signature, and rule updates along with “Formation CIRT to Formation CIRT” information sharing arrangements.
- **Security Management.** The administration of both security and infrastructure by the Security Operations Centers (SOCs)—both in the daily operation of the tools and also the patch management and other vulnerable management tools. These capabilities also help build and maintain the visibility of the total information environment in the TBA—to the goal of cyber information superiority in the battlefield.
- **Security Operations.** The processes, roles, and responsibilities of the Security Operations Centre including monitoring, mitigation and response

processes, including reporting. This area is the fusion of the tools (Threat Defense), monitoring (Threat Visibility), and insight (Threat Intelligence).

- **Security Governance.** The success of a singular framework for cyber security to improve information superiority and drive simplicity requires the correct degree of organisation oversight by formation commanders and general staff. Threat awareness, risk analysis, policy developments and enforcements, identification of standards, legal agreements and compliance, and educations are all organisational capabilities in this domain.

Figure 2: Cyber Capability Framework



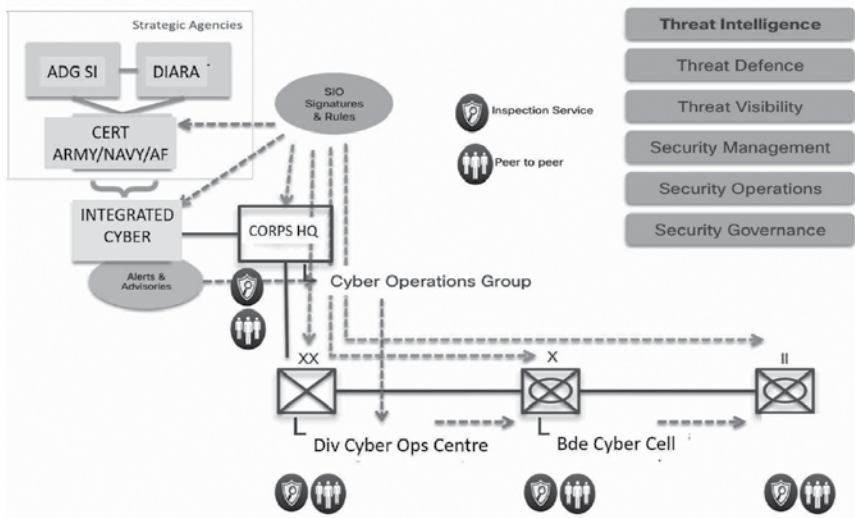
Putting This Framework into Action

“Looking at one specific area of the cyber capability framework, in this case threat intelligence, Figure 3 below provides a functional outline of how the capabilities and services supported by this capability are applied at various echelons of strategic and tactical HQs and units. The scenario detailed depicts a land-based Cyber Security operations Corps and below and supported by a range of strategic agencies (primarily from Operations, Intelligence & Cyber Security Group). In

terms of coordinating these cyber security activities and outcomes, the scenario also shows the traditional signals operational control elements at Corps HQ, Divisional HQ, Brigade and Combat Group level.”⁶

This is illustrative only as these cyber functions could also be integrated with other operations or effects-based cells at the various echelons.

Figure 3: Threat Intelligence Hierarchy and A Tactical Scenario



A Set of Recommendations for Cyber Security on the Battlefield

Shift Securely from Wired to Wireless. The need for mobility and rapid deployment is key to the ‘always-on command-and-control’ platforms. This necessitates the use of wireless networks in addition to conventional landlines and fiber lays. This shift has been impeded by a sense of vulnerability that we have in wireless technologies and systems. Secure transmission of classified information over wireless networks has been a challenge and has an impact on the quality of the situational awareness picture that HQs and commanders need. Focus is now needed to develop and deploy SFF (Small Form Factor) wireless systems that can be quickly deployed without loss of security. These systems can be Commercially Off the Shelf (COTS) with strap-on security envelopes and hardened for the TBA.

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Transition from Traditional Radios to SDRs. Software Defined Radio (SDR) as a technology shift for tactical wireless, help radios to work with multiple waveforms, multiple frequencies, and a wider range of capabilities. Implementing the radio functions in software gives more flexibility, more configuration options, and adaptive communication protocols. This pivot to SDR will also help in the cyber security of wireless networks.

Harden the Radio Nets and Tactical Networks. As Dulik states⁷, security can be measured through three vectors.

- Usage of the contemporary cryptology methods for data at arrest and in motion.
- Improved authentication and authorisation protocols.
- Capability to evade adversary's Electronic Support Measures (ESM) and Electronic Counter measures (ECM) through Frequency Hopping (FH), Direct Sequence Spread Spectrum (DSSS) and adaptive smart antennas.

Pay Attention to Air-Gapped Systems Equally. There is a myth that air-gapped systems and networks are safe and secure from cyber-attacks. While it does indeed provided isolation from the internet and other unclassified public networks and systems, there are still "gaps" in the air-gaps! Insider threats/compromise, supply chain weaknesses, poor configuration, social engineering via media drops. LEDs/Radio/Ultrasound/thermal manipulation via signals are all vectors.

Revise the Architectural Approaches of Tactical C3I. Points are as under:

- **Leverage the Success of IP networking**, allowing battalions/regiments and formations to standardise and consolidate information-based capabilities and improve operational function and service delivery.
- **Establishing the Cornerstone of a Division/Brigade Wide Communications Architecture** in a way that enables rapid changes in Orders of Battle (ORBATs) and timely application of combat power at decisive points in the tactical battle.
- **Delivering Tactical Clouds** such that they change the way in which applications are constructed over lightweight infrastructure—affording

thin client applications for edge forces that address size, weight, and power issues (SWAP). Such an application of an agnostic environment allows users to plug and play Army-developed software applications.

- **Building an Ecosystem of Integrators and Developers** that optimizes capital investment by delivering scalable network infrastructure and leverages the synergy between applications and the network aligned to a ‘battlefield app store’ approach for warfighting and support functions. This BAS is a function that can be owned by the OIS (Operational Information Systems) pillar in Directorate General of Information Systems where each of the C3I components, CIDSS (Command Information Decision Support System), BSS (Battlefield Surveillance System), ASMS (Air Support Management System), ACCCS (Artillery Command Control Communication System), ADCRS (Air Defense Control and Reporting System) and BMS (Battlefield Management System) have both enterprise and mobile endpoint versions.
- **Agile Improvisation.** Crowd sourcing for new-age wars might well become a norm. Implying that platforms brought in the last minute by units/formations might lack cyber hygiene in one way or the other. This collectivisation might require a more democratic cyber approach with a quick cycle of HQ approvals.

Move C3I to the Edge. Given the constraints of bandwidth and reliance on CNR (Combat Net Radio) and Radio Relay (RR), there is a need to shift from re-architecting C3I applications like BSS and CIDSS to enable computing, analysis, and storage at the “edge” —this will significantly reduce the volume of data in motion and latency. Not all sensor and edge data is required to be transmitted back to higher C3I nodes. Michael Crowley, Director Public Sector, VMware, says that from a security point of view, this decentralization will make it more challenging to the adversary to bring down all the edge devices in a single attack. This also permits forward HQs and units to be more mobile with decreased reliance on networks and be able to execute their missions with local compute/storage.⁸

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Centralize Visibility of Cyber Security Across the Battlefield. Even while a “decentralized application architecture” is recommended as earlier in this article, the need for a “single pane of glass’ approach to network, application, and edge devices’/sensors’ visibility is an imperative. Major General John Morrison says, “Army network centralisation will improve global visibility and cybersecurity”, and this must also make visible data in all its lifecycle—at rest, in transit and in process.”⁹

The Corps/Division SOCs needs to overwatch the Cyber Security posture of formations and units thus relieving formations and units the worry about covering their “cyber-flanks” and “cyber-fronts.”

These SOCs will be responsible for Incident Management, Analysis and Mitigation on a 24x7 basis as the tactical situation rolls along. They would also be supported by intelligence and information coming down from the strategic levels where higher order of cyber-defense platforms are deployed. In short, there would be no lateral silos or echelon-based silos as far as management of the cyber domain in the battlefield is concerned.

Develop Cyber in a Box– Simplicity in the TBA. Charlie Kawasaki, the chief technical officer of PacStar, mentions that simplicity achieved by use of small form-factor (SFF) systems is key to deploy cyber security. He says this can be done by:¹⁰

- Deploying cyber-defense capabilities at the edge of the tactical echelons requires simplicity above all. Small form-factor (SFF) devices insertable into points in the tactical networks for automated detection, analysis and response which can be handled and managed by semi-trained pers will be useful. Instead of having dedicated specialists, the units, HQs, and CPs can have capabilities that are simple to deploy with minimal training overhead. Often, formations and units may be offline and these SFF devices should be able to defend the tactical cyber perimeter 24x7.
- Analyzing data locally at the edge which can take the load off networks, while only forwarding metadata to higher cyber nodes and SOC echelons. This will speed up the detection to recovery cycle.

Address the Cyber Skills Shortage in Formations/Units. As far as possible, the cyber defense measures at the edge must be based on automation (assisted by AI and similar techniques) so that manual oversight and governance is minimal. A threshold of cyber security skilling will be required in all units, but the specialised personnel in Corps/Division SOCs can focus more on advanced threats and not be drawn into the forward units. As Major Scott Humr writes,

“Similar to how every Marine is a rifleman, every service member will need to become a cyber operator in some capacity.”¹¹

Enhance Cyber Awareness and Education in HQs and Units. In the coming battlefield realities, every soldier will need to have a base level of cyber awareness and understanding.

Platoon commander and upwards will be needed to imbibe cyber security essentials for operations. And a core set of personnel will need advanced levels of training. Given the tools available in the digital knowledge realm, these training requirements can be met by self-paced learning modules with little need for extensive training in specialised cyber security institutions. An Intelligence Officer, Captain Stephanie Seward says, “Commanders should advocate for real-world cyber training and take full advantage of that training when offered.”¹² Clearly, use of case studies and scenario-plays must be introduced.

Include Cyber in Wargames and Sand Models. Cyberattacks are generally a support element for another effort. Bottom-up inclusion of cyber security in all courses and formation wargames/sand-model discussions is now an imperative. Realistic narratives and requirements must be prioritised, and dove tailed into classic operations of war discussions and this interesting hybrid of cyber-kinetic possibilities must find a place on the agenda. It is time to expand the Comd. and Electronics section of a tactical Operations Order (OO) to extend into a well-defined plan of action in the emerging tactical cyber ops environment.

Conclusion

Core amongst many lessons learned and best practices acquired while fielding earlier versions of our C3I systems is the fact that tactical C3I systems and networks require a far higher scale of system integration and COTS adaptation, all founded on an architecture-led approach that is central to system development. Developing and implementing a comprehensive cyber security capability in C3I for the battlefield requires extensive all-arms collaboration led by a unified cyber security tactical philosophy which requires to be coordinated by the General Staff.

For most militaries, “realising the impact of greater information sharing and collaboration afforded by C3I systems while simultaneously safeguarding the very infrastructure and resources these capabilities depend upon is a massive challenge. As cyber threats extend across all battlefield domains and increasingly

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touch every aspect of operations, no single entity or capability can fully address the delivery of cyber security.”¹³ To address this complexity, this article provides an outline of cyber security challenges, recommendations, and a guiding capability framework to facilitate the delivery of comprehensive, agile and resilient tactical cyber security capabilities in defence of C3I systems.

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The Versatility of Drones: Implications for the Indian Military

AMIT GUPTA

Abstract

Modern wars have brought out the advantages of the utilisation of drones on the battlefield. Hence, a requirement exists that India, too, must invest in this contemporary and cost-effective technology. This article, after giving a brief background history of drone warfare, discusses the effectiveness and utility of military drones. It, thereafter, examines the need for a joint drone acquisition policy for the Indian armed forces as well as a coherent and effective way to acquire and produce these weapons. India must start investing in drones now so as not to lose the technological edge in a rapidly-evolving field of conflict.

Introduction

In the past decade, drones have revolutionized the way modern wars are being fought, and countries and militaries around the world are scrambling to build and acquire these systems for their force structures. Thus, after initially pooh-poohing the idea of drones,¹ the United States military is pushing forward the Replicator program to build a large number of low-cost, autonomous drones to swamp Chinese defences.²

At the same time, countries like Turkey and Iran have made a financial killing by selling their drones, which are made largely of 'off-the-shelf' components, to

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Azerbaijan, Ukraine, and Russia to pursue their wars.³ Iran has also given its allies, like the Houthi in Yemen, drones which have been used quite effectively against both Saudi targets as well as, more recently, against tankers in the Red Sea. Since wars are being reshaped by the use of drones, this article is divided into two main parts. The

first part discusses the background history of drone warfare bringing out the effectiveness and utility of drones from the earliest to the present times. The second part examines the need for a joint drone acquisition policy for the Indian armed forces as well as a coherent and effective way to acquire and produce these weapons.

Drones: The Origin

Experiments with drones began in the 1930s when both the US Navy and the British military began to conduct experiments with unmanned systems. This continued into the Vietnam War where drones were used for surveillance by the United States (US). The Israelis successfully used drones in various conflicts in the 1980s, but it was in the 1990s however, that drones were introduced into modern-day conflicts. In 1993, the newly appointed Central Intelligence Agency (CIA) Director, James Woolsey, sought a surveillance craft that could loiter for hours over the rough terrain of Bosnia. By then the civil war in Bosnia was in its first year and it became clear that given poor weather conditions, satellite surveillance could only give a few minutes of coverage every day over the terrain. Yet, the US intelligence needed an aircraft that could fly for long hours over a battlefield that was complicated by the fact that the combatants were mostly not in uniforms.

The CIA went to the Pentagon to acquire a drone and was told that it would take five to ten years to bring such a program to maturity and would cost between half a billion to one billion dollars. Since the Bosnia war was ongoing, the CIA needed an alternative that was quicker to field on the battlefield. Woolsey, therefore, started a program in the CIA to develop Unarmed Aerial Vehicles (UAVs) and an Israeli-American UAV designer, Abraham Karem, who had owned a drone company that went bankrupt, was asked to improve his Amber series of drones to make them quieter and stealthier. The project moved at high speed and within roughly six months the improved version of the Amber, now dubbed

'Predator', was flying over Bosnia and giving real-time surveillance coverage of a difficult battlefield terrain.

The fact that the program was brought to fruition so quickly was a testament to American innovation and the ability of the CIA to bypass the acquisition bureaucracies of the Pentagon to rapidly develop and deploy the aircraft. The aircraft, dubbed the 'Predator', was a success since it was low-technology, made out of 'off-the-shelf' components, and was later armed to become an anti-personnel aircraft. Yet, despite the success of the airplane, it met with institutional resistance from the United States Air Force since the planes were slow, easy to shoot down over a contested air space, and worse, they took the fighter pilot out of the cockpit.

The United States Air Force (USAF), under its short-sighted chief, Teed Michael Moseley, was not in favour of building up a drone force and, instead, wanted to purchase more F-22 Raptors and F-35 Lightnings. The USAF also argued that people joined the Air Force to fly planes and drones had no pilot.⁴

The USAF has also continued to go through a tortuous exercise on what to call unmanned vehicles because drone is not considered a catchy enough name for an aircraft, for pilots to fly. American institutional resistance to drones led to the USAF not investing in the program even after the fact that in the Iraq War and the subsequent counterinsurgency, drones were invaluable for targeting insurgents. The CIA, on the other hand, bought off-the-shelf drones and used them successfully to carry out surveillance and the targeting of terrorists in Iraq, Afghanistan, and along the Af-Pak border. The United States Navy has also begun to induct drones on its aircraft carriers and plans to use them for a range of missions including aerial refuelling. While American, European, and even Russian institutional resistance led the major powers to not seriously invest in drone production, other countries started to produce and export drones with a significant impact on the battlefield.

UAVs began to make their mark in the modern-day battlefield with the Azerbaijan-Armenia conflict where the Azerbaijani military was able to successfully use Turkish drones, which were constructed using off-the-shelf technologies, to inflict heavy damage on Armenian artillery and sway the tide of war in the favor of Azerbaijan. The Turkish Bayraktar TB2, which as mentioned earlier was made out of existing components, "contributed to disabling a huge number of Armenian tanks, fighting vehicles, artillery units, and air defenses. Their penetration of Nagorno-Karabakh's deep rear also weakened Armenian supply lines and logistics, facilitating later Azerbaijani success in battle."⁵

The Ukrainians were able to draw the first successes with drones but the Russian military learnt from its mistakes and not only assembled electronic countermeasures to jam incoming drones but ramped up the production of their systems.

Similarly, in the war between the Houthi rebels in Yemen and the Saudi military, the Houthis were outgunned by the Saudis who were able to use their advantage in air power to destroy the air fleet of the erstwhile Yemeni Air Force that had been captured by the Houthis. In response, the Houthis innovated and used Iranian drones to attack Saudi oil facilities and even managed to damage them. Since then, the Houthis have used drones to attack both oil facilities and military targets

and, on occasion, have been successful in their strikes. Admittedly, most of the drones are being shot down by the Saudi forces but the cost of air defense against drones is far more exorbitant than launching low-technology and low-cost UAVs. The quality and sophistication of these drones has grown, however, and they are now able to travel close to 1000 kilometers into the Saudi air space.⁶

Globally, military practitioners and analysts have finally realized the utility of drones because of their considerable success when used by both the sides in the Ukraine-Russia war. The war was initially marked by an exchange of artillery rounds but their high cost, as well as a shortage of munitions in the West and reportedly in Russia⁷, led to the incorporation of drones by both sides into their arsenal. The advantages were obvious. The drones were cheap and easy to manufacture and according to one source the Ukrainians used the readily available First Person View (FPV) drones of wedding videographers to direct artillery fire.⁸

The Ukrainians were able to draw the first successes with drones but the Russian military learnt from its mistakes and not only assembled electronic countermeasures to jam incoming drones but ramped up the production of their systems—notably the Lancet suicide drone—and imported Shahad drones from Iran for long range surveillance and attack.⁹ Ukraine was to import drones from Turkey, European nations, and Australia and set up a cottage industry to manufacture them domestically with off-the-shelf Chinese components.

The cheapness, effectiveness, and technological crudity of these systems make them easy to operate and allow them to be expended in large numbers without becoming a financial problem for a fighting force, for—as one credible report pointed out,—the Ukrainians have been losing 10,000 drones every month which would be a staggering amount if applied to a more expensive system.¹⁰

Thus, Ukraine received the cardboard SKYPAQ drone from Australia which has been useful for surveillance, by simply cutting a hole in the body and inserting a Go-Pro camera, for delivering small munitions, and even medical supplies to forward units. The fact that the body is of cardboard makes it more difficult for sensors to detect and counter.¹¹

Both sides are using drones ranging from cheap hand-held devices to more expensive long-range systems to wage war in four ways on their opponent: first, the suppression of enemy air defenses; second, the use of drones to attack artillery units; third, to inflict damage on armor by targeting the more vulnerable parts of a tank; and, fourth, to hit moving targets along the front line.¹²

The Ukraine war has brought out the capabilities and weaknesses of drones in the modern battlefield and led to a transformation of how war is waged. Both sides are not using large formations of soldiers or armor knowing that they would be sitting ducks for a drone attack. In fact, the tanks supplied by NATO have been destroyed by Russian drones (and mines) much to the surprise of the European militaries thereby changing the way armour can be used in modern conflicts.¹³

At the same time, there are limits to what can be achieved by drones. The weapons can be jammed fairly easily by the electronic countermeasures of the other side and this has led to calls for developing Artificial Intelligence (AI) directed drones that can seek out targets independent of a ground-based controller whose radio feed can be jammed.¹⁴ Simple countermeasures like putting nylon netting around expensive weapons systems helps reduce the damage caused by FPV drones which have low payloads—often the size of a grenade. Larger more complex drones can cause greater damage as seen by the effectiveness of the Russian Lancet drones.

The Lancet is currently produced in two versions: Lancet 1 and Lancet 3, with the Lancet 1 warhead being around one kilogram and that of the Lancet 3 is three kilograms. The warheads can either be a “shaped charge” which is effective against armored vehicles or a high-explosive fragmentation version used against personnel or light vehicles. The Lancet is fabricated from lightweight radar-transparent plastic, which makes it difficult to spot in flight and it has greater maneuverability and targeting ability.¹⁵ Estimates about the cost of each drone vary between \$20,000-\$35,000 and this gives the weapon an impressive cost-benefit ratio since it has been used to destroy both multimillion dollar tanks and aircraft.¹⁶

In fact, the consequences of such developments are that the future we will see two types of drones for the use by militaries. At the tactical level, hand held

UAVs are important tools to wage war against an opponent since they offer mobility over rugged terrain, long-endurance surveillance capabilities, and the capability to carry out tactical strikes.

FPV devices will be required especially in low electronic warfare environments where the threat of jamming will be less and they will provide tactical advantages to troops. As things stand, very few nations have a large and modern Electronic Warfare capability that could jam incoming drones. America, Russia, China, Israel, and some of the nations of Europe come to mind. But in conflicts among less-militarily advanced nations, FPV drones will be valuable at the tactical level to carry out surveillance and inflict damage on enemy personnel.

When it comes to long-range drones that are in the Medium Altitude Long Endurance (MALE) or High-Altitude Long Endurance (HALE) categories, the benefits are considerable since they can carry comprehensive intelligence-gathering packages as well as far more powerful munitions than the small grenade-sized bombs on FPV. The effectiveness of the Predator and Reaper drones, which have been armed with the Hellfire missile, against military targets is a testament to this capability. The costs of such systems, however, are likely to go up in the future as these aircraft will be required to have better anti-jamming capabilities that would include the ability to use AI to allow the drones to autonomously seek out targets. That would remove the capability of the opponent to jam the radio transmissions from the operator to the drone. At the same time, militaries will have to develop better electronic warfare capabilities to jam and divert these weapons systems. This will be an arms race that will get increasingly expensive and one in which major militaries need to start thinking about investing now so as not to lose the technological edge in a rapidly evolving field of conflict. AHH

In the modern-day battlefield, therefore, UAVs are important tools to wage war against an opponent since they offer mobility over rugged terrain, long-endurance surveillance capabilities, and the capability to carry out tactical strikes. Moreover, there are a variety of naval and land-based drones emerging that could be used to carry out asymmetric warfare against the enemy. This, then raises the question, how does India go about raising a capable force of aerial, land-based, and naval drones?

An Indian Drone Acquisition Policy

The French leader Georges Clemenceau once said that “war is too serious a matter to leave to military men.” The same goes for weapons acquisitions and

the development of military doctrine because in the event of a military disaster, the blame is laid at the doorstep of politicians. The loss in the 1962 war with China is not blamed on the Indian military and, instead, is firmly centred around Nehru and his defence minister, V. K. Krishna Menon—even though a very convincing case could be made about the ineptness of the Indian military in that conflict. Today, the country's strategic thinkers keep thinking of mimicking the great powers and buying expensive weapons systems which they cannot get in sufficient numbers to impose their military will on the battlefield. Thus, despite all the hype in India, 36 Rafales do not change the air balance between India and China.

Further, when Indian politicians have a choice between guns and butter, they always choose butter which is the developmental needs of the country. The two Manmohan Singh governments as well as the two Narendra Modi governments have kept the defense budget around 2% of GDP since they wanted to devote resources towards developmental projects. Keeping defence spending at a fairly low level—India's former planning commission used to recommend spending 3 percent of GDP on defence—is, therefore, not the action of a particular political party but, instead, a necessity recognized by all the parties in India's political spectrum and this is unlikely to change in the short to medium term unless the country faces a grave existential threat.¹⁷

Nor is India's political leadership seeking to carry out aggressive military actions like trying to liberate Pakistan-Occupied Kashmir or China-occupied Aksai Chin. Instead, politicians from both ends of the political spectrum seek to deter India's enemies and preserve the country's territorial boundaries. Given this fact, the country's grand strategy calls for a defensive military posture and one which makes an efficient use of limited financial resources. To do this, requires a degree of jointness in defense acquisition which the Services have been able to occasionally achieve in the past.

Thus, the Army, Navy and Air Force purchased the Chetak helicopter which served the three services well in their efforts to carry out their missions. More recently, all three have purchased the Dhruv helicopter thereby creating economies of scale. The Air Force and the Navy use the Hawk for pilot training and the Navy is now going to buy the naval version of the Rafale which will lead to an economy of scale on spare parts, maintenance, and for the acquisition of armaments.

When one looks at drone acquisitions, however, the result is a mixed bag with the military having done a good job with the acquisition of FPV drones but,

India has a thriving private sector drone manufacturing industry which has been helped by governmental policies that are giving domestic industry both the protection and the incentive to produce such cheap systems.

on the other hand, there have been delays with the acquisition of the larger and more complex aircraft. India has a thriving private sector drone manufacturing industry which has been helped by governmental policies that are giving domestic industry both the protection and the incentive to produce such cheap systems. Thus, the Indian government first banned the import of Chinese drones and then the use of Chinese components in Indian manufactured systems. This has led

companies to seek partnerships in both Israel and Europe for the subcomponents for these drones although it is estimated that 70 percent of all drone components are manufactured in China.¹⁸

Additionally, the acquisition of large numbers of FPV drones is cheap enough to not go through the cumbersome acquisition process that has to be used to acquire more expensive weapons systems like tanks, artillery pieces, fighter aircraft, and submarines. The cheapness of these systems and the ease in acquiring them is reflected in the Army's success of ordering, under emergency procurement, a set of swarm drones for its use from the Bengaluru-based New Space Research & Technologies.¹⁹ This will give the Army the ability to potentially swarm and possibly overwhelm artillery, tanks, and air defense systems in future wars. The other advantage, from the perspective of the Army, is that these cheap drones give a quick, rough and ready tactical air capability to units along the borders with both China and Pakistan. Moreover, it frees up the larger drones that are controlled by the Air Force to carry out long-distance and long-endurance missions thus removing one of the more contentious issues between services of achieving operational jointness. While tactical drones are easy to procure, especially when purchased from the domestic industry, the issue becomes more complicated when it comes to MALE and HALE drones.

Firstly, one must recognize that these systems are needed quickly so the government cannot permit lengthy delays in finalizing weapons deals. Nor can it put the constant demand for indigenising production (Make in India) ahead of what is militarily vital to the country. The Indian government is inking a deal with the American company, General Atomics, to purchase 31 MQ-9 Reaper UAVs so that the Navy will acquire 15 drones and the Air Force and the Army will get eight each.²⁰ These systems would stay in the air for over 24 hours and would help

deal with the surveillance challenges India faces over rugged and mountainous terrain in the Himalayas. If these UAVs are armed with missiles, they can also be used in the Himalayas to fly slowly over targets to deliver precision-guided strikes. This would be particularly valuable in a future Himalayan conflict for, during the Kargil War of 1999, the Indian Air Force's fast jets could not operate at slow enough speeds to locate pinpoint targets—something that a UAV force would be very effective at. The Reapers would also

be useful to monitor illegal movement along the Line of Control and be used for maritime surveillance by the Indian Navy. It would make sense, therefore, to enter into negotiations with the United States for license-producing the Reaper in the country. License production makes sense because India is a vast nation with extensive boundaries that face two hostile opponents. Eight MALE UAVs, therefore, are insufficient for the Army to monitor the Pakistan and China borders as well as perhaps the North East region. Nor would they be sufficient to allow the Army to carry out counterinsurgency operations in different parts of the country. Producing them at home would lead to an inventory that would be sufficient for all three Services as they seek to carry out their doctrines.

Secondly, the challenge for the military is how to include India's defense science base in this process since it has considerable influence with the country's political leadership which is keen to support the domestic design, development, and production of weapons systems. In the context of drones, the defense establishment has built a MALE drone—Rustom—which has recently been renamed 'Tapas' and the defense public sector would like the military to buy these in sizeable numbers because it is estimated that the military, paramilitary, and other security services will need around 5,000 drones.

The problem is that both the Rustom and its renamed self, the Tapas, have faced developmental issues that include multiple crashes, weight issues, an inability to arm the drone, depending on a Russian Saturn engine, and not meeting the performance parameters set by the armed services.²¹ It is claimed that the production model will have an indigenous engine but neither HAL nor DRDO have ever developed a workable one, thus begging the question why are valuable resources being expended on a project that is unlikely to come to

The challenge for the military is how to include India's defense science base in this process since it has considerable influence with the country's political leadership which is keen to support the domestic design, development, and production of weapons systems.

fruition? These limitations have now led the DRDO to start the development of another drone, the Archer NG, but again there is no guarantee that such a program could be successfully brought into series production.

A better alternative would be for DRDO to seek partners with friendly nations of a comparable technological level to make a simple robust MALE drone, as a surveillance system and possibly, in the future, have an armed capability. The two best partners would be Brazil and South Africa since both nations have excellent political relations with India and both would benefit from a collaborative relationship with this country. The South African arms industry is strapped for cash and is actively seeking external collaborations to financially survive.²² Brazil has a robust aerospace industry and like India has vast territories that need to be patrolled by drones. While it currently has a system of radars and surveillance aircraft to monitor the Amazon, it could use drones that are more cost-effective and have better loiter capabilities in the rainforest. The collaboration will lead to a workable drone that can be brought to production in a timely manner and, if it is built for the forces of three countries, would lead to economies of scale.

Additionally, a surveillance drone that is built for all three armed Services and the country's police forces will reshape how the country conducts its security operations. Maritime surveillance is vital to prevent a repeat of the 2008 Mumbai terror attack where terrorists were able to slip into Mumbai harbour in a fishing boat without being detected. This was particularly galling for the Navy since Mumbai is the home of Western Naval Command, the country's premier strike fleet. It is in the interest of port security, therefore, to make UAVs available to coastal defence authorities as well as to the Coast Guard so as to strengthen the country's maritime security.

Further, as India's global economic footprint grows, real-time maritime surveillance is needed to monitor and protect the country's large Exclusive Economic Zones in the Arabian Sea and the Bay of Bengal. From a naval perspective, UAVs provide the best means to monitor the movement of the Chinese fleet coming out of the Strait of Malacca.

Moreover, UAVs like the Reaper are expensive since not only do they require ground stations for guidance, but satellite links to permit long-range coverage and integration with other weapons platforms. Thus, thanks to satellite links, American UAVs can be controlled by crews as far away as Nevada and the Czech Republic making them particularly versatile in their use and also not leaving personnel vulnerable to attacks along the front lines of combat. But UAVs of

a lower technological capability are also very useful for the Army, the Border Security Force, the Assam Rifles and the Indo-Tibetan Border Police.

Conclusion

Drones have changed the face of warfare and India will have to invest heavily and rapidly in their production and delivery to the military and the security services. In this context, India's drone policy has been partially successful as the tactical FPV drones are being inducted into the arsenals of the Indian military. Building them in greater numbers to make them cheaper and having higher levels of redundancy is vital to the success of this project. If mainly FPV drones are being expended at the rate of 10,000 a month by the Ukrainian forces then it gives some indication of what kind of numbers will be used in a future war. What will be required, therefore, is a large number of FPV drones to have a usable reserve in a conflict with a country with an equal drone capability like China.

The medium and long-range drones will require a set of pragmatic choices that involve partnerships with foreign companies. License-producing the Reaper will be one option. The other one is to work with partners to make an affordable and less technologically complex drone that will fulfil the surveillance requirements of the forces. This is an easy choice to make and while other Indian arms procurement efforts take decades to finalize, this one has to be brought about quickly to strengthen the capabilities of the different services for the modern battlefield.

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Notes

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Development of AK 203: Challenges and Prognosis

SK SENGAR

“Today, many big companies are turning towards India. We have to move forward with the mantra of ‘Make for World’ along with ‘Make in India.’”

– PM Narendra Modi

Abstract

Indo-Russian Rifles Private Limited (IRRPL), a Joint Venture (JV) between India and Russia was incorporated in 2019 to produce indigenous rifles in India. The project, since its inception has moved at a steady pace. Throughout its journey, the project has gone through crests and troughs with formidable challenges of various types being creating an international JV in times of Covid-19 and the Russia-Ukraine war. The article primarily brings out major challenges which retarded the desired pace of the project and aims to crystal gaze its future trajectory. The article relies on the personal experience of the author being the first CEO and MD of the project.

General

In the realm of international defence partnerships, the Indo-Russian Rifles Private Limited (IRRPL) joint venture has emerged as a beacon of collaboration, marking a significant milestone with the production of the AK-203 assault rifle. Established in early 2019, this venture brings together the formidable expertise

The Indo-Russian Rifles Private Limited (IRRPL) joint venture has emerged as a beacon of collaboration, marking a significant milestone with the production of the AK-203 assault rifle.

of Rosoboronexport (RoE) and Concern Kalashnikov (CK) from Russia, and Advanced Weapons and Equipment India Limited (AWEIL) and Munitions India Limited (MIL) from the Indian side. The JV aims to absorb technology to manufacture AK-203 assault rifles over approximately three years and thereafter, produce indigenous rifles in India.

The JV will bring relief to woes being faced by Armed forces by replacing the INSAS rifle which was inducted in 1994 as a personal weapon for the soldier.

The Army has been looking for a modern assault rifle to replace the INSAS which is outdated and even at inception fell short in respect of some parameters of the army. This was a continuous source of worry for the Armed forces. The delay in the production of modern rifles for our soldiers actually amounted to an injustice to the *jawans* as the adversary especially on the Northern borders is equipped with better rifles than the INSAS. The INSAS was initially built with features borrowed from several different rifles and was not made to meet the specific requirements of the Indian security forces. This amalgamated design, while serving the Army for over 30 years, has started to fall behind the needs of modern warfare. The INSAS rifle had serious limitations in terms of lethality, reliability, being heavier in weight, lack of an integrated sighting system, etc. The AK-203, after its induction, will completely replace the INSAS rifle.

A Symphony of Expertise

The IRRPL Board of Directors, a symphony of strategic minds, features representatives from each side, ensuring a balanced and informed decision-making process. This collaboration has seamlessly blended Russian engineering prowess with Indian ingenuity, culminating in the successful production of the globally renowned AK series of assault rifles.

IRRPL has its shareholders, on the Russian side RoE and CK with 49.5 percent and AWEIL and MIL on the Indian side with 50.5 percent. The Board of Directors of IRRPL comprises four Directors from Russia (one from RoE and three from CK) and four from India (Two from AWEIL, one from MIL and the CEO of the company, presently an Army officer).

A Socially Responsible Endeavour

The operationalisation of the AK-203 project goes beyond its military implications; it marks a socially responsible initiative that positively impacts the local community. The project, situated in Amethi, Uttar Pradesh, has become a catalyst for positive change.

The initiation of the project has led to the creation of job opportunities for the local population. As the AK-203 project gains momentum, it not only fulfils the immediate needs of the defence forces but also contributes to the economic well-being of the local workforce.

The project is not just about defence, it's about community development. Local Micro, Small and Medium Enterprises (MSMEs) in Uttar Pradesh and other parts of India are benefiting from the AK-203 project. The collaboration with these enterprises not only fuels the local economy but also nurtures the growth of businesses within the region. This project will give a fillip to MSMEs in the Uttar Pradesh Defence Corridor and thereby realise the goal of "*Atmanirbhar Bharat*" as envisioned by the Hon'ble Prime Minister.

The AK-203 Assault Rifle: A Marvel of Innovation

At the heart of this collaboration lies the AK-203 assault rifle, a testament to innovation and advanced technology. Designed as a gas-operated, rotating bolt, magazine-fed, select-fire weapon, chambering the 7.62 x 39 mm cartridge, the AK-203 stands out as the latest and most lethal addition to the illustrious AK series. Its combat and tactical capabilities have been augmented to deliver enhanced fire accuracy and an extended barrel lifespan.

Unique Features Redefining Small Arms

The AK-203 isn't just a rifle, it is a technological marvel. With a folding butt and Picatinny rails on the top and lower portions, the rifle accommodates a diverse range of tactical equipment. From day and night vision devices to reflex sights, holographic sights, under-barrel grenade launchers, and more, the AK-203 is a versatile solution for modern warfare. Its distinctive features, such as a finger tab facilitating seamless fire selector switch transitions, a user-friendly locking mechanism, and a serrated type flash suppressor, showcase meticulous attention to detail. The flash suppressor not only substantially reduces blast and flash

but also contributes to the rifle's enhanced accuracy, overcoming challenges observed in its predecessors.

A Journey of Challenges and Triumphs

Early challenges included, firstly, operationalising the Inter-Governmental Agreement (IGA) and forming the board of directors. Overcoming bureaucratic legal procedures in Russia for director information-sharing presented initial restraints.

Secondly, efforts to optimize the rifle's cost faced complexities, driven by commercial interests rather than the spirit of the IGA. Transfer of Technology (ToT) costs and remittance to Russia posed additional roadblocks and this issue took almost one year to formalise.

Thirdly, the major challenge was to remove the apprehensions of own stakeholders, particularly from AWEIL, regarding infrastructure sharing and quality control issues. The overarching efforts to save their turf were a major obstacle in the smooth operationalisation of the project.

Fourthly, a challenge was to seamlessly integrate the legal procedures of both countries to formalise rules for business transactions within the JV and with outside agencies not only within Indian territorial boundaries but in compliance with international corporate compliances.

Fifthly, the onset of COVID-19 posed a major challenge retarding the operationalisation. The slow progress impacted negotiations as the conduct of meetings was limited to video conferences thus denying intimate discussions necessary for early conclusion of contracts.

Sixthly, a significant challenge that led to a nearly year-long delay in the project was the recurrent need for multiple trials, each plagued by unsuccessful outcomes attributed to inadequate quality manufactured by a leading Defence Public Sector Undertaking (DPSU).

Seventhly, the Russia-Ukraine war brought in another challenge impacting the production of semi-knocked-down rifle kits at Concern Kalashnikov, further delaying the supply from Russia. The sanctions imposed on Russia severely impacted not only the transportation of machinery and rifle kits from Russia but also the remittance of money from India to Russia.

Learning from History

This joint venture draws lessons from historical collaborations, such as the HAL-Russia venture for military helicopters which will be a replacement for the

ageing Cheetah and Chetak and the successful BrahMos cruise missile project. It acknowledges challenges faced in previous joint ventures, emphasising the importance of meticulous planning and strategic foresight. History becomes a powerful teacher as the AK-203 initiative unfolds. By learning from the successes and challenges of past collaborations, the joint venture charts a course that not only addresses the immediate needs of the armed forces but also sets a precedent for future partnerships. As the AK-203 project progresses, it stands as a testament to the enduring value of historical insights in shaping the trajectory of collaborative endeavours in defence innovation.

Aspirations for the Future

Looking forward, the joint venture anticipates challenges in technology absorption, and aims to improve value addition. The apprehension is largely due to low skill levels in new factory workers, as well as the long time that it takes to inculcate the competence in them to convert the drawings of a state-of-the-art design into production. In addition India's record in designing state-of-the-art weapon systems, propulsion and avionics has been rather dismal. The conversion of the roadmap charted in the agreement with respect to weapon design, development and association to reliable vendors for raw materials as well as kits for assembly will remain a major challenge in the project. The JV will have to put aside respective shareholders' narrow interests to implement ToT in letter and spirit. There are likely to be delays in the initial phase of technology transfer especially the transfer of all the drawings, creation of prototypes, quality control issues, scouting for suitable raw materials, both steel and polymer, and documentation related to all these aspects.

The maintenance of quality control of incoming material for assembly, thereafter its assembly and formulating testing standards to produce a quality weapon, will remain a challenge. This will entail a transformation of organisation culture in newly-formed DPSUs from erstwhile ordnance factories. Presently, the new DPSUs are struggling to adapt to a new atmosphere of operating in a competitive arms market. The challenges for them will further multiply after the period of initial hand-holding by the government ends in the coming years.

The joint venture would be wise to adopt a strategy of comprehensive 'Indianisation' rather than solely focusing on indigenisation, recognising the potential for efforts from the Russian side to sustain supplies from their end and potentially impose Russian procedures. In navigating these challenges, the

joint venture must remain steadfast in adhering to the spirit of the IGA while strategically steering towards a model that authentically integrates and aligns with Indian interests and operational dynamics.

The joint venture must strategically explore various options, prominently focusing on the expeditious transfer of technology. This initiative opens doors for seizing opportunities to independently produce an indigenous Indian rifle, with a dynamic and active involvement of the private industry. Urgency in concluding the ongoing joint venture, mandated for the production of 7.5 lakh rifles, is imperative to exercise true locus of control, ensuring autonomy and effective management of the entire process.

There is a huge potential demand for a rifle like the AK-203 with Indian Para Military forces and State police expressing interest in its acquisition. A conservative estimate indicates that domestic demand itself may cross two million. In addition, the export option to South East Asian nations and the African continent needs to be explored. The JV will have to put production, supply chain and quality control mechanisms in place in an expeditious manner to exploit the opportunities. However, the delay in the absorption of technology and subsequent supply to the Armed Forces is adversely affecting the project. Any further delay will result in the diversion of demand from potential customers to other sources.

Traditionally, the Indian defence system has harboured reservations about private participation in the production and supply of arms and ammunition to the Armed Forces. The current joint venture, however, marks a significant departure by actively involving capable private entities. This move not only fosters trust in the capabilities of the private industry but also lays the groundwork for strengthening and expanding such partnerships.

To further enhance transparency and efficiency, the government should contemplate transitioning to an open tender system for ammunition procurement. Implementing competitive bidding not only promises cost savings for the government exchequer but also ensures the delivery of superior-quality products. It is crucial for the government to critically analyse the potential drawbacks of over-dependence or monopolies held by DPSUs and consider diversified strategies that promote healthy competition and innovation within the defence manufacturing sector. This approach aligns with the broader goal of achieving self-reliance and efficiency in the defence ecosystem.

Conclusion

The success of the Indo-Russian joint venture in producing the AK-203 assault rifle will not only bolster India's defence capabilities but also represent a significant stride towards self-reliance. This cutting-edge firearm, produced entirely in India, not only supports the *Atmanirbhar Bharat* initiative but also cements the nation's position as a key player in global defence collaborations. The AK-203 is more than a rifle; it is a symbol of strategic synergy and technological prowess, setting the stage for future breakthroughs in defence innovation. In all, it is indeed a matter of justifiable pride to affirm that the joint venture is poised to manufacture a cutting-edge assault rifle completely in India. This landmark achievement not only ensures our soldiers are equipped with optimal firepower but also acts as a catalyst for the advancement of the Indian industry, heralding a new era of innovation and self-sufficiency.

Major General **S K Sengar**, AVSM (Retd), an Infantry officer, was the founding member of the team that steered the prestigious project of IRRPL as CEO and MD for four years from inception in 2019 to 2023 leading to successful production of AK 203 rifles in India. Views expressed are personal.



SCHOLAR WARRIOR

SECTION V

HUMAN RESOURCES AND LEADERSHIP

CENTRE FOR LAND WARFARE STUDIES

The Long View— Perspective of a Battalion Commander

SV PITRE

Abstract

This article is a critical examination of the collective conscience of an infantry battalion as seen through the Commanding Officer's (CO's) lens. If a CO feels that his/her battalion must reach the pinnacle of achievement then the CO must first carry out an honest appraisal of where the battalion is in terms of its sister battalions, at least within the Division. The basic structure of every infantry battalion is the same. The paradigm of their training is the same. There are minor differences in Regimental Standard Operating Procedures (SOPs) but by and large, they are the same. The difference lies in two factors, the CO and the men; and the temperamental strengths and weaknesses of both. The first is dynamic while the second is constant. It is for the CO to recognise both his and his unit's strengths and weaknesses and find the perfect fit for achieving the desired goal—excellence. Towards this end, this article provides insights into how the unit can approach the means to its goal.

Introduction

A battalion can make a mark for itself if its core, as nurtured and built up by the predecessors, remains strong, traditionally etched, and draws inspiration from the time-tested traditions established by our forefathers. There are two

images of a unit i.e., perceptible or the outward one which is sensed by the environment and can be largely orchestrated as desired, primarily through short intensive impetus; and the second, an inward or the imperceptible one also called as the internal health of the unit which

It's a corollary that if the internal fabric is strong, the outward positive perception would follow.

requires continuous and consistent nurturing with a long gestation period. It's a corollary that if the internal fabric is strong, the outward positive perception would follow. There is a line quoted in psychology which reads, *"How we do anything is how we do everything."* Herein lies the greatest challenge as at the point of application it is observed that there are phenomenal disconnects such as a lack of collective convergence thrust in setting forth the best foot forward while the unit's pride is at stake, the inability to clearly decipher delineated competing priorities, perpetuity of being stuck in accolades of the historical past, and lame excuses which necessitate investment of tremendous energy through constant shepherding to achieve the desired results. This leads to a lack of synergistic effect. The aim, therefore, is to introspect the factors which have caused a lack of concerted effort and to lay a suggested vision of how to address this particular challenge so that an efficient synchronisation of the desired outcome is achieved in the long run.

What has Changed?

A few factors, primarily imposed on externally and certainly more often being inherently supported cause misbalance and subsequent aggravation in the way we approach even the most mundane aspect of battalion functioning.

- **Sub-Unit Homogeneity.** At a rifle company level, which is the sabre-prong of an infantry battalion, there is a disruptive effect in homogeneity as manpower shortages in peacetime are unavoidable. In peacetime, there cannot be restrictions on leave and the nature of duties is such that in a peace station sub-unit homogeneity cannot be maintained except in short periods of collective training or during pre-induction training. On the LC/LAC, a no war-no peace scenario, for the complete tenure the unit is deployed in sub-units. The CO consequently is hindered in permeating

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his vision and intent into the unit. Peacetime engagements and detailments on guards and duties, formation level detailment, courses and Temporary Duties cause a severe stretch. This results in exercising command and control primarily through non-contact means as the available manpower is dissipated in different locations.

- **Inspirational Junior Leadership.** Junior leadership i.e., the Young Officers, Junior Commissioned Officers (JCOs) and Non-Commissioned Officers (NCOs), are the bedrock of any unit. They are it's cutting-edge. They are the ones who should lead by example, should not be scared to voice their genuine views, take risks, are go-getters and most importantly invest in creating a legacy of their own. With Annual Confidential Reports assuming importance right from the soldier level the 'play safe' attitude increases from the NCO level onwards reducing the investment in the points given above.
- **Pareto Principle.** Following the Pareto Principle, 20 percent of the Officers/JCOs/NCOs contribute to 80 percent of the efficiency of the battalion. In other words, it is 20 percent of the battalion which does the heavy lifting. The CO's challenge is to stretch the principle, but it appears that we are straight-jacketed within this rule, having accepted it as unchangeable.

What Can be Changed?

Officers. Course gradings are a reflection of the professional temperament of an officer. An instructor's grade on a course of instruction is an indication of the perseverance to compete and excel amongst equals while carrying the name of the unit. A unit whose officers consistently return with average grades on PME courses over the command tenures of more than one Commanding Officer needs to revamp the drills of the battalion to prepare officers for attending PME. Even if the counter-argument is advanced that lack of good course gradings is compensated by sound ground performance then in this regard, too, there is a lot to be desired. Ownership of professional/sports teams, initiative in leveraging technological thresholds, interest in professional and administrative well-being of the men under command, live wire energies and the curiosity to immerse into the cauldron of gaining experience remains elusive. It is only an intensive soul

searching, internal awakening and a “seizing the day” attitude which will help correct this.

Junior Commissioned Officers (JCOs).

The profile of the JCOs today appears much more vibrant, younger and leaner. The strength of 66 JCOs in an infantry battalion can be leveraged to offset the shortage and inexperience of officers. However, here, too, the 80/20 Principle is evident. Here too, it is only the handful who take the initiative and move out of their comfort space. When the unit is detailing JCOs for PME it is mostly from among the 20 percent that the JCOs are detailed because the others may not be able to clear the detailment standards. As a result, 25 percent to 35 percent of JCOs may not have done any course at an Army school of instruction. When such JCOs are due for superannuation, they are extremely disappointed for missing the Honorary rank and only kept wondering: Where did they go wrong?

The author remembers the words of a JCO from his battalion when being dined out from the JCO Mess on posting to IMA, Dehradun after securing a PC course A (I) grading. He forewarned his colleagues that the Agniveers he saw in Jabalpur during training have broken all records and the desire to excel is much more than before. He urged them to get into the habit of competing as change is coming, or else, they would fall far behind in the race that has already begun. It will require consistent higher appraisals, qualification upgrades, seeking challenging billets in an intense CI/CT environment and also the espousal of a new-found vigour if this trend has to be changed.

A good JCO can be discerned from the ownership he takes of the young officers in guiding them to learn the finer intricacies of man management and professional aspects. A good JCO is positive and takes a hands-on approach to getting a task done. The author fondly recollects a JCO when he was a Young Officer (YO) who had been an instructor in Platoon Weapons. The kind of ownership and authority with which he took charge of YOs was an art that every JCO should imbibe. Learning in such a *guru-shishya* (teacher-student relationship) is mutual.

When a JCO entrusted with a particular sports team which is preparing away from the unit for an upcoming competition seeks telephonic permission

Ownership of professional/sports teams, initiative in leveraging technological thresholds, interest in professional and administrative well-being of the men under command, live wire energies and the curiosity to immerse into the cauldron of gaining experience remains elusive.

to put the boys through fatigue training since they seem to be whiling effort, it gives an insight into the proper selection of JCOs who exercise initiative while being assigned with result-oriented tasking. The solution is in the identifying and increasing of such good JCOs within the infantry battalion.

Non-Commissioned Officers (NCOs). During a morning Physical Training parade, the author enquired from an NCO, who was trailing far behind, as to what appointment he was holding in his company. Quick was the answer, “*Sahab Naik...Neutral hoon.*” He meant to say that he was an NCO who was coasting around aimlessly in neutral gear. The NCOs are the activity-level fulcrums of any sub-unit. If they feel that they have no responsibility then they will neither have any job satisfaction from their NCO rank nor will they grow professionally. Getting into motion from the inert neutral gear to higher sprocket combinations does represent an inflection point.

Some Thoughts After 30 Months of Command in Peace & Field

While we take pride in being an operation-oriented army, the JCOs and NCOs who are doing well are placed into administrative appointments. Every CO wants to have his battalion running well in peace and field. The dichotomy is that peace requires the good Officers/JCOs/NCOs to hold administrative appointments and the field requires the the same good lot to hold operational appointments. But the hangover from peace persists for some time in the field, and as a result, a unit, once it moves to the field, may have its administrative appointments trying to wear two hats. It is very common to have the adjutant—a handpicked administrative appointment—being used to lead a Quick Reaction Team.

It is the responsibility of the CO and Company Commanders to use their Rashtriya Rifles (RR)² returnees to contribute to guiding the young rifleman about their Counter Terrorist experiences and preparing them for the time when they may get an opportunity to serve in RR or the battalion itself which in many cases are in CI operations. This is the best opportunity to train and invest in operational small teams at every sub-unit level and retain this as a core competency for tenures to come.

Experience of Professional/Sports Team. While winning and losing in professional competitions is part of the game, here again, there is a dichotomy. Such competitions instill a team and competitive spirit for war. However, one can't tell men that in war, too, winning and losing are part of the game. The battalion

has to imbibe a competitive spirit. Many times, teams which do very well in practice matches with results unmatched by anyone during the run-up to the finals, buckle under pressure to a runner-up position in the final matches. In poor results, there is one common underpinning. These are excuses, over-confidence, lack of ownership, wilting under pressure, lack of killer instinct to prevail the honor of the unit, absence of ingenuity, right temperament, making tough calls by respective team-in-charge, and lastly, individual brilliant talent not being able to coalesce into a team.

Operational Prowess. The operational orientation of the rifle companies is something which is always work under progress and appears an uphill climb which needs to be scaled at war footing. The tendency of the RR exposed combatants to fade into oblivion out of own volition remains very high. The proclivity to recall outdated experiences of the past while the adversary continues to always remain ahead of the OODA loop through his ingenuity and exploiting our predictability needs to be guarded against. The logic being put forth here is that individual brilliance must coalesce itself into collective intelligence that can adapt quickly, evolve better tactics and beat the adversary at his own game through cognitive application. A CO must plan to immerse his battalion completely into the operational environment. Preparation for combating emergent situations should not be like the traditional first light and last light stand-to. In modern war threats can materialise at any time of the day and night, due to enhanced and ever-increasing night vision capability.

Learning to Handle Modern Equipment. We have the clear example of a Pakistani army which came out second best in the 1965 war with more modern equipment than the Indian Army.³ This reinforces the point that unless a soldier is trained to handle modern equipment, the equipment will be of no use. In recent times many modern equipment items are being inducted into the infantry battalion. An example is small drones. As the unit continues to augment its drone inventory of varied specifications, the quick uptake of our young riflemen needs to be leveraged through creating an expert talent pool of experienced drone pilots which shall only have a bolstering effect on our operational capability.

The CO must guard against any coteries at play reversing any progress that the unit intends to make by subsuming meritocracy.

Dual Tasked Specialisation. The manpower deficit as prevalent, ill affords us the luxury of a single rifleman being able to do only one task. The present challenging circumstances due to the acute manpower stretch, dictates each soldier of the battalion being adept at dual tasking. In addition to his primary task, the individual must be proficient in operating surveillance equipment/crew served weapon/communications specialists/combat engineering/Battle Field Nursing Assistant. One is sanguine that with the induction of the highly competitive Agniveers, they will certainly be more than eager to take on multitasking as a core competency.

Documentation. The human in the loop is more impacted by a deadly combination of an incompetent sub-unit commander and a clerk who may be ill-informed and ill-interested soldier. Unless there is an adequate oversight mechanism there will be poor unit level documentation. If pay and allowances of the soldier are affected by delayed or incorrect publication of Part II orders it will ultimately affect morale. It would be worthwhile to spend unit regimental funds on procuring automated documentation solutions based on the Enterprise Resource Planning Package.

Individual Biases. There is no doubt that individual biases in terms of favouritism, regionalism and caste-based divisions are largely at work though overtly denied but covertly perfected. The CO must guard against any coteries at play reversing any progress that the unit intends to make by subsuming meritocracy. Such parochial thought processes and practices are also the main cause of why individual brilliant talents don't make great teams.

Conclusion

It was an eye-opener for the author to witness the pre-induction training of the battalion at a Corps Battle School (CBS) on the move to an active field. Each activity was a revelation in the group dynamics of various sub-units. Personnel appeared much less bonded than is expected. They all worked well as individuals. Very few cared about their brethren who trudged behind be it the individual events or small teams. The unit set two individual records on the board at the CBS but none in the form of a team and that is what really required rectification. But in small teams, we missed it by wide margins. This to my best knowledge only indicates the supremacy of the individualist over the collective conscience and

this is exactly the single biggest factor that will impede a battalion in completing difficult tasks to perfection.

The 80/20 rule (or 20/80 in the context of this article), should not make us fatalistically complacent. It is a principle which had a fair degree of correctness. Yet it is not immutable. Even if a CO can pull up 5 percent of his Officers/JCOs and NCOs into the category of achievers by all means, he can think of the resultant ratio of 25:75 or even better 30:70, which will lead to a quantum jump in the efficiency of the infantry battalion.

Only one thing can stop a good infantry battalion from achieving whatever it seeks to achieve. This is the lack of a collective conscience obfuscated due to individual biases which somehow are too genetically endowed and are hard to let go. The day all ranks of a battalion realise this, all ills will be left behind.

But finally, the onus lies on the 'Tiger' – CO, to steer the decisive effort.

Colonel **S.V. Pitre**, SM, is commanding an infantry battalion on the Line of Control and the article is based on the firsthand experience and dispassionate analysis of the Battalion's performance in peace and field. Views expressed are personal.

Notes

1. VIH Consulting, Unlocking your Strength for Success. <https://vlhconsulting.com/articles/2018/7/10/how-you-do-anything-is-how-you-do-everything>.
2. Rashtriya Rifles is a Counter-Insurgency Force made up of all ranks on a 24/36 month deputation.
3. Shekhar Gupta, "The war Pakistan lost and India didn't win", *The Print*. <https://theprint.in/sg-national-interest/the-war-pakistan-lost-and-india-didnt-win/544337/>

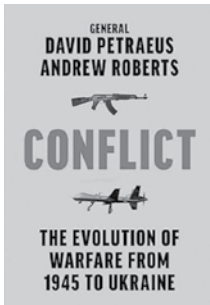


SCHOLAR WARRIOR

SECTION VI BOOK REVIEWS

CENTRE FOR LAND WARFARE STUDIES

Book Reviews



Conflict: The Evolution of Warfare from 1945 to Ukraine

David Petraeus and Andrew Roberts

William Collins, pp. 534

ISBN: 9780063293137

Rs 2113 (Hardcover); Rs 739 (Paperback); Rs 260 (Kindle)

“Conflict: The Evolution of Warfare from 1945 to Ukraine” by David Petraeus and Andrew Roberts tackles the ambitious task of weaving 75 years of warfare into a cohesive narrative. While acknowledging its limitations in scope, this review explores the book’s strengths, weaknesses, and contributions to understanding modern conflict.

The authors provide an accessible overview of major global conflicts, making it a valuable primer for those new to the subject. The emphasis on strategic leadership and formulating clear “big ideas”, offers a unique lens through which to analyse historical events and draw lessons for the future. The book effectively showcases how neglecting fundamental principles like soldier morale, discipline, and preparedness can lead to costly failures. The ongoing war in Ukraine is a powerful case study, demonstrating the importance of leadership, confidence, and strategic planning in contemporary conflict. Petraeus’ firsthand accounts of Iraq and Afghanistan offer valuable insider perspectives on modern counterinsurgency.

While the chosen conflicts are significant, the absence of crucial events like the 1979 Sino-Vietnam War, the 1982 Lebanon War or the troubles in Northern Ireland creates gaps in the narrative. The desire to extract clear-cut lessons from complex conflicts can lead to oversimplification, neglecting nuanced historical

contexts. While briefly touching upon future trends, the book's focus on historical studies risks neglecting the impact of rapidly evolving technologies on warfare.

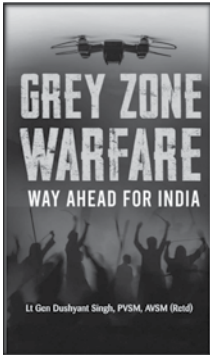
Key takeaways from the book are as follows:

- State-on-state warfare remains a threat, as evidenced by the Ukraine invasion.
- Leadership plays a crucial role in determining the success or failure of military campaigns.
- Understanding lessons from past conflicts is essential for navigating future challenges.
- Counterinsurgency warfare requires specific strategies and approaches.
- Democracies face unique challenges in the information age, with disinformation posing a significant threat.
- Sustained investment in military preparedness is necessary to deter aggression and protect national interests.

The book is a valuable contribution to understanding modern war, offering a broad scope, insightful analysis, and compelling case studies. However, its limitations in coverage and potential for oversimplification necessitate a critical reading. While the book focuses on strategic leadership, exploring the roles of other actors, such as intelligence agencies and civil society, could provide a more comprehensive picture of modern warfare. The book could have delved deeper into the role of technology in a future war, exploring issues like Artificial Intelligence (AI), cyber warfare, and autonomous weapons. The ethical implications of modern warfare, including civilian casualties and the use of drones, deserve further consideration. The impact of climate change on conflict and the potential for resource wars also could be explored in more detail. Comparing and contrasting the leadership styles of different commanders and their impact on outcomes can provide deeper insights.

The book concludes by emphasising the enduring importance of human factors in conflict, but further discussion on how technology will shape these dynamics would be valuable. "Conflict" is thought-provoking for anyone interested in war and strategy. While its limitations require careful consideration, the book's strengths and unique perspective make it a valuable addition to the genre. By engaging with its analyses and acknowledging its gaps, readers can gain a deeper understanding of the evolution of warfare and its potential future trajectories.

Dr. **Shushant VC Parashar** is a Research Fellow at the Centre for Land Warfare Studies (CLAWS), New Delhi. Views expressed are personal.



Grey Zone Warfare: Way Ahead for India

Lt Gen Dushyant Singh, PVSM, AVSM (Retd)

Vij Books, New Delhi, India (2023)

Rs. 1450/- (Hardcover) pp. 259

ISBN: 978-81-19438-02-0

In *Grey Zone Warfare: Way Ahead for India* (2023), Lt. Gen. Dushyant Singh tackles the complex topic of grey zone warfare with a particular focus on India's national security challenges and responses. It seeks to constitute a literature on "what is grey zone warfare?" The author defines grey zone warfare as a conflict that falls between conventional war and peace. Moving beyond definitions, the book discusses the diverse tactics that make up grey zone warfare, such as information warfare, cyber-attacks and proxy wars. The book also highlights how modern technologies, such as social media and drones, have shifted the paradigm towards more covert and ambiguous forms of warfare.

Chapter 1 discusses the need for a more covert approach to addressing challenges emanating from grey zone warfare. Drawing on historical and strategic examples, such as Chanakya's teachings and tactics in ancient India and Sun Tzu's strategies in China, the author emphasises the enduring nature of grey zone tactics in Indo-China. The chapter underlines the use of deceit, deception and non-contact warfare through various strategies like legal orchestration, psychological warfare, information operations and cyber warfare. The chapter also examines instances from scriptures like the Mahabharata and historical events like the rule of the East India Company, illustrating how grey zone tactics have been employed throughout history (p. 7).

In Chapter 2, the author brings out his understanding of the five modes of the grey zone. First, deniable attacks, which include cyber-attacks, drone attacks, electromagnetic attacks or assassinations. (p. 21) Second, Information Operations, which include electoral interventions, false text messaging, rumours, and deep fakes employing niche digital technologies. Third, the use of proxies, which includes state-sponsored terrorism (p. 22). Fourth, the use of economic coercion, which includes sanctions and trade restrictions. And

fifth, territorial encroachment, which includes seizing sea lanes and annexing territory (p. 23).

In chapters 3, 4, 5, and 6 the author analyses the role of major global players—Russia, the US, China and Israel, respectively—in grey zone warfare. The author provides various examples of covert operations, cyber warfare and information operations to explain each country's strengths and weaknesses in the grey zone. The author defined Russia as an adept practitioner in the grey zone, the US as a subtle player, China as an emerging but formidable threat and Israel as the master of grey zone warfare with very few failures.

In Chapter 7, the author analyses the challenges for India in the grey zone. According to the author, India's strategic autonomy makes it vulnerable to grey zone warfare from both adversaries and sometimes even neutral or friendly countries. Further, in discussing China, the author stated that it utilises pressure tactics, economic leverage, diplomatic manoeuvres, and military posturing to undermine India's interests and influence its neighbours. Examples include China's attempts to sway India's economic decisions, border face-offs like those in Galwan and Doklam, and leveraging regional disputes like the Limpiyadhura-Kalapani-Lipulekh issue with Nepal. The chapter also discusses how China employs a multi-dimensional approach, including diplomatic, economic, military, and information warfare, to weaken India's position regionally and globally. Apart from China, the chapter states that the Pakistan Army plays a central role in perpetuating grey zone warfare against India through tactics such as proxy wars, information warfare, and supporting terrorist activities (p. 26, p. 127).

In Chapter 8, the author addresses how India can reorient its strategies and policies to effectively manage grey zone conflicts. There is an emphasis on the need for a multi-disciplinary approach that integrates military, economic and diplomatic strategies. The author suggests moving away from conventional warfare towards more nuanced, intelligence-driven operations. The chapter further suggests a communication strategy for social media as well as print media at both the national level and the global level (p. 153). In suggesting the Crisis Management Plan, the author asserts the need for a long-term and short-term plan in the information sphere (p. 158). The author recommends the creation of a tri-service Social Media organisation for defence, which would include spokespersons and senior officers to respond in public forums, press and media platforms (p. 161). The author also asks to utilise land formations like Integrated Battle Groups (IBGs) to swiftly respond to threats in a grey zone without escalating

into full-scale conventional warfare. He gives many recommendations which include: enhancing the capabilities of special forces for cyberspace operations, including the use of swarm drones and precision strikes, to counter grey zone threats effectively; empowering special forces to operate beyond Indian territory and enabling robust military responses to grey zone warfare; and strengthening the position of the Chief of Defence Staff (CDS) to transform the operational structure of the Armed Forces towards integrated theatre commands tailored to India's needs (p. 164).

The book is a valuable source for those who are interested in security studies, international relations and defence strategies. It also seeks to provoke thinking about the changing nature of global conflicts and the need for constant adaption in national security studies.

Namita Barthwal is a Research Assistant with the Centre for Land Warfare Studies (CLAWS), New Delhi. She is a PhD Candidate with the MMAJ Academy of International Studies, Jamia Millia Islamia. Views expressed are personal.



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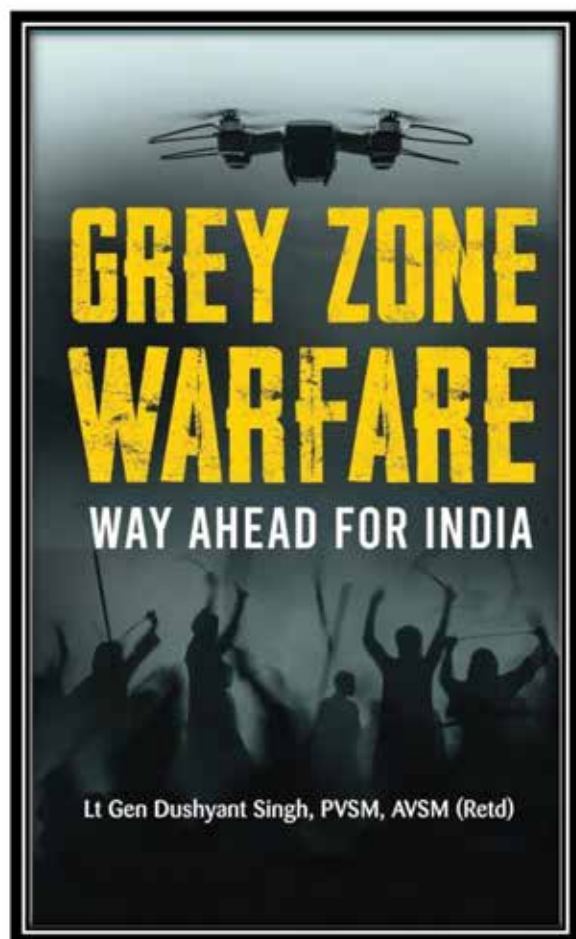
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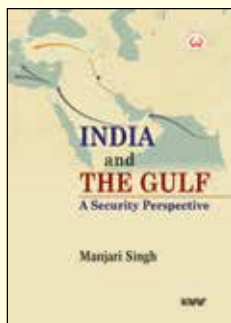
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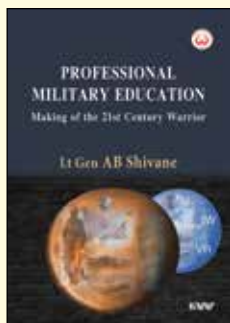
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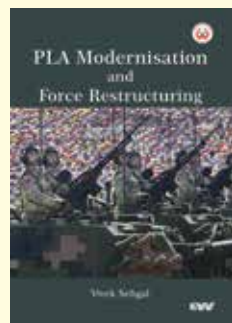
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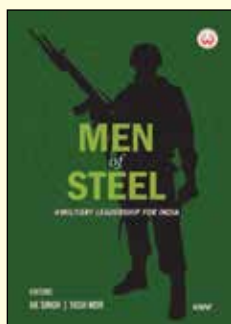
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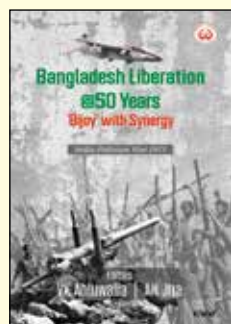
₹ 680/- (PB)



Future Technologies
for the Indian Army

PK Chakravorty

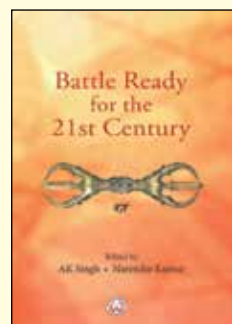
₹ 680/- (PB)



Bangladesh Liberation
@50 Years
'Bijoy' with Synergy
India-Pakistan War 1971

VK Ahluwalia & AN Jha (Eds.)

₹ 1280/- (HB)



Battle Ready for the
21st Century

AK Singh and Narender
Kumar (Eds.)

₹ 995/- (HB)