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Empowering Commanders for Tomorrow

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Backdrop

The commanders of the future will have an unparalleled experience, unique to each individual and largely unpredictable, they must be prepared for anything, even if only cognitively. The task ahead is daunting, and this paper aims to quantify the competencies required of tomorrow's commanders and provide some methodologies for attaining them.

Commanders must comprehend the fact that future battles will be multi-dimensional and multi-directional. This will require them to attack the enemy's weaknesses with their strengths. Even though they may not have the personal experience or knowledge to develop battle strategies and plans independently, they will need to select a capable team to manage the battle's progress. In most cases, they will be assigned a team and will be expected to manage within their experience circle. The focus is on the 'Man – Machine – Method' trinity, where the 'Machine' represents the rank and file under the commander's command, the 'Method' is the organisational environment, and the 'Man' is the commander himself.

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Is there a need to empower?

Yes. The warfare complexities are increasing. The erstwhile reliance on the Order of Battle (ORBAT) seems a passé. Traditionallly commanders are expected to manage the battles in their sectors, with the tools under the command and within their organic structures, bidding for the additional effort. The staff at higher HQ would collate all the additional bids, critique, and advice on the sub-allocation of the HQ's own ORBAT resources. The operational commander would then be expected to integrate these resources into his battle effort. Future battle spaces will cross domains and dimensions, forcing commanders to be more adaptive and flexible. The managerial leadership of future commanders will be tested beyond reprieve.[1] Future commanders will have to include inputs and resources beyond traditional 'area of responsibility' boundaries. There will be smart systems, amassing multiple sensors inputs and shooter's capabilities, curating battlespace awareness and targeting suggestions to all levels of commands, simultaneously. The future commanders will seek precision recalls from smart systems, actively rather than proactively. So, yes the commanders have to be empowered to understand this change from the managerial one to the adaptive one.

Russians lost at least seven general-rank officers during the Ukraine War in the initial months. These losses are considered heavy by all standards. A theory attributes the losses to poor generalship since they had to be present on the spot, to control the battle. Their presence at the front is widely attributed to; motivating the soldiers; controlling the battle to compensate for poor tactics; poor electronics and communications; being plain Gung Ho; or even war medal fishing. There is another theory that attributes non-delegation of authority due to inadequate professional capabilities. All in all, were the generals unprepared to deal with the battle as it

unfolded: cross-domain; cross-dimensional; highly informationalised, and non-organic support from volunteers? Yes, they were, and thus a strong case for this analysis.

Case Study Ukraine. Ukraine provides unique insights into future conflicts, especially on commanders and their military decision-making, as elucidated below:

- Russia failed miserably to secure and isolate the tactical battlefield. During the Kyiv offensive, the Ukrainians were able to observe Russian movements via CCTV coverage on roads and buildings, frequently targeting them.

- Russian decision to avoid targeting the utilities initially, allowed Ukrainians to collect a heartened situational awareness. Ukrainian internet and telephone services, on the other hand, targeted Russian cognition continuously. Only after the attack on the Crimean Bridge on Putin's birthday, did they begin targeting the energy grid, which was intended to, but failed to mobilise, population pressure to negotiate.

- In the Zaporizhzhia region, Russians decreased their vulnerability in the captured areas by paying the residents to stay – calling it 'sustenance money'.

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- Sniper operations eliminated many commanders in the Ukraine war. Snipers are here to stay and can transform the results in the tactical battle area by subliminally attacking the cognitive.

- The readiness to absorb inorganic support into tactical battlefields has continuously proved useful to both sides.

- Be ready with negotiation options during all phases of the battle. Commanders have to identify clear termination objectives since the Ukraine war indicates the emergence of negotiations at short notice – Russian withdrawal from Kherson to the south of Dnieper before the winters of 2022

was hardly contested – indicating some form of negotiation.

Case Study Nagorno-Karabakh (NK). The NK war also provides following lessons for the commanders:

- There were motivated mercenaries[2] on both sides, many with economic motivations. This surge provided much-needed succour to uniform forces.

- Forcing the enemy's air defence to show its position by using old A2 Biplanes[3] bought from Ukraine and retrofitted them for remote flying.

- Former Nagorno Karabakh Republic (NKR) Defence Minister Jalal Harutyunyan[4] was reportedly targeted by a direct drone strike by Azerbaijan to demotivate the soldiers. Selective targeting of higher defence organisation members yielded huge results.

- Within two days of the commencement of hostilities, Azerbaijani special troops were reported seen in the town of Hardut almost 30 km from the front line. It was a bold decision in modern times, an indication of full synchronisation between military and political leadership.

Empower Oneself

Future battles are likely to be unpredictable and untested, presenting significant challenges. Operational commanders hold a crucial position as policy enforcers in the military hierarchy and they are responsible for interpreting doctrine and using it to create strategic plans for successful military operations. This task is challenging and requires significant responsibility, as they must create advantageous battle conditions to achieve their objectives.

As warfare becomes more complex and technology advances, military commanders must adapt to new strategies and tactics. Even with sufficient expertise, they may not be equipped to handle the newer aspects of warfare, and they must develop additional competencies to face these challenges successfully. They must have

the cognitive flexibility to understand the intricacies of modern warfare and possess a variety of skills for multi-domain operations across land, air, sea, space, and cyber domains. They will need to integrate artificial intelligence, unmanned systems, and autonomous weapons into their command structures, managing man-machine interfaces effectively.

Commanders must constantly learn and acquire new skills to remain relevant in the changing military landscape. Future commanders must possess a diverse set of competencies to succeed in their roles.

Natural Nature of Operations. Craig Reynolds a famous programmer creates computer models to understand natural systems. His most famous work simulating bird flights is called flocking algorithm. He theorises - "a natural order exists where individuals follow simple rules in their movement, without external intervention. These rules enable movements and reactions much faster than if external interference were present". In the military context, this algorithm suggests that a force, when operating, will follow intrinsic flocking rules to achieve combined efficiency and effect without external intervention. Few interpretations related to this paper are as follows:

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- Despite the transparency and communication present on the battlefield, external intervention may be wrongly perceived as a necessity to 'assist' the operating force. Military commanders may be tempted to take tactical decisions to intervene in the hope of quick and successful termination. However, this intervention acts as a 'flock spoiler' for the combat forces, questioning the ongoing nature of events and delaying the combatants' response instead of hastening it. Military commanders with access to such decision choices must be formally trained to take a *'Garur Drishti'* or the long look, beyond the tactical battle, and at longer time frames.

- Generating isolation operations and coup de main options should become the ruling norms for future commanders. This approach of standoffish involvement is contradictory to standard military training and the commanders must understand the natural nature of operations and suitably reorient their roles to adapt.

30000 Feet[6] Look. Repetitive tenures, unique to the military, offer exclusive skill sets, suitable for short and snap assignments in various continental neighbourhood conflicts. However, such tenure may also spawn blinkered visions that future commanders will have to counterintuitively avoid. They could refrain from sharing personal experiences that may have occurred under different operational climates and contexts. Instead, they could train themselves to acquire a wide, not a deep, look from high above to see the horizon while staying away from the ground hazards of planning and execution. Commanders have to be aware of personality traits manifested by repeated tenures and prepare operational constructs supported by tactical logic, operational necessity and guaranteed by operational concepts. Commanders will have to consider following:

- Future commanders will have to adapt to this new approach and focus on looking beyond the tactical battles to analyse the bigger picture. This shift in perspective will help them identify potential threats and opportunities that may not be immediately apparent. By taking a broad and strategic approach, commanders can better prepare their forces for the unexpected and develop more effective operational plans.

Nationalised bank account of an operational formation deployed along Line of Control were frozen on the orders of the Labour Commissioner. The case in point, pertained to injury to a casual porter in 2001, who filed a compensation claim in 2011. The military unit, unaware

of the case, failed to represent in time at the Court of Labour Commissioner, which led to an ex-parte decision of compensation, including 12% default interest; which led to delayed payments, due to unavailability of funds; which led to the freezing of the bank account. The operational commanders must, therefore, continuously 'Long Look' and identify such cases to prevent them from becoming launch pads for hostile activities. Future commanders have to be trained to identify and address these unconventional points of attack, lest the military be reduced to a purely reactive force.

Leave it to Specialists. In the science fiction work of 1973, Robert Anson Heinlein[7] famously wrote, "A human being should be able to change a diaper, plan an invasion, fight efficiently, die gallantly. Specialisation is for insects". However, in the current century, there is a need for specialists, since it is impossible to individually acquire and utilise all the burgeoning skills. Future commanders will have to seek inputs from specialists who are confidentially familiar with their respective operational procedures. However, these specialists may have a myopic view, so commanders will have to identify the interconnections between all such 'expert outputs' and stitch together a campaign plan. The creation of common standards and frameworks will ensure successful war preparation and planning.

Professional Military Education (PME). The current PME curriculum falls short in addressing the evolving nature of warfare, as it heavily relies on analysing a limited number of past wars and battles, which may not be relevant in predicting the nature of future conflicts. While studying historical events is crucial in offering a background and comprehension of present and future warfare, it is not adequate for equipping leaders with the necessary skills to excel in the multifaceted battlefields of tomorrow. The new PME must place more emphasis on the impact of technological advancements such as electronic warfare, cyber, disinformation, space, and other related developments on the battlefield of the future. PME has to be curated to offer leaders the necessary tools to navigate the complex and dynamic nature of future warfare.

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Verbalising Threats. It is an inconvenient truth but has to be narrated as often as possible. This is essential to pass around the big picture and create a framework for the future. With the present state of Indian media maturity, this articulation should withhold discussions of Weaknesses and Opportunities. Some scholars are suggesting national-level participation to address national security issues in form of seminar series, essays, and compilations which could be later utilised as study material by service academies, war colleges, and academia.

Inter- Organisational Relationships. Future battles will entail coordinated and joint efforts of many domain specialists at all levels of operations. This will depend on the bonds of relationship between organisations. Timely employment of the tools across the spectrum and timelines will stress the durability of such relations. Unless the commanders develop analogous standards, well-known communication protocols, and formats, the relationship will not stand the operational anxiety. Relying on interpersonal relations to sustain the vagaries of future conflicts is a misnomer and will fail in the stressful times.

Short Tenures. Quick promotions and short tenures of military commanders are routinely touted as a flaw in the Indian system; however, a survey indicates that all major countries follow similar policies. America and UK promote 2 stars at a service of 25-30 years and they serve for 10 years more, almost similar to Indian standards. Russian generals retire at 60 years, while Chinese at 55 years, serving an average of 10 years in these ranks. Indian Corps Commanders with an average tenure of 13 and Army Commanders with 22 months are sufficiently enabled to ensure compliance with existing strategies while testing the new ones.

Empower the Team

The Indian Military HR policy does not cater to sector-specific staff in a HQ, relying heavily on the experience of the commander instead. It is expected that the

commander's military familiarity will overcome siloed knowledge of the junior staff. This is also validated by the fact that the junior staff may not have a sufficient 'big-picture' look. Staff officers arriving from various competitive courses may be inexperienced and approach the appointment on a 'learn mission' rather than a 'staff mission'. The rank structure and inherent military predisposition do not offer or encourage many opportunities for ideating. Unlike peace formation, the operational one is too busy with ongoing events to auger contemplations. The Senior Command and Corps HQ staff with sufficient experience and appointment proximity can provide operation comments to the commanders, but this idea resonation ends at the Principal Staff Officer (PSO) level, leaving the junior staff to prepare and present knee-jerk compilations and reports. What is the solution for it? Empower the team and the Machine, which also includes the lower formations and units.

Military Training. Military training is essential to teach a common set of physical actions under combat conditions. This commonality of actions by the soldiers increases the tactical effect of small military sub-units during combat. These actions are set pieced against standard enemy actions and may fall short of what the enemy will bring to battle in the future if the standardisation is too rigid. Military training must be improved to incorporate a more comprehensive range of capabilities for tactical leaders and account for the effects adversaries can use in the future. To prepare soldiers for combat, training needs to prioritise agility, adaptation, and resilience, mirroring the future battlefield. Units must train to offset failure, intentionally changing scenarios and forcing participants to be adaptive rather than repetitive. Some may argue that individuals and units should master the 'basic skills' before focusing on adaptation, but the definition of 'basic skills' could be re-evaluated. Soldiers must train their ability to adapt, improvise, and look outside established courses of action

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Understand The Box Before Thinking Outside it. Training for soldiers cannot be limited to either repetition or failure; both are necessary. First, soldiers must internalise lessons through repetition before progressing to more complex iterations and introducing new variables. Introducing complexity too soon can lead to injury and demoralisation, similar to adding weight to physical exercise before the trainee is ready. Re-examining the basics is essential, and re-evaluating the training calendar and prioritising proper training is necessary. As many wise individuals have said before, 'Don't blame the tools for poor workmanship'. Trainers should invest more time in designing training exercises that relate to real-world problems and situations instead of simply trying to fix a document that lacks engagement and impact.[8]

Group Think is quick but a Quandary. It is a common attribute of a hierarchical organisation like the military. It will occur if the commanders encourage consensus over the judgment of individuals. Authoritative and close styled leaders subconsciously voice their opinions and suggestions before the group makes a decision – inadvertently encouraging consensus. Repeated tenures may also dissuade ideation and promote group thinking if the commanders do not inspire free thought and professional discussions. General NB Singh[9] theorises, "Near similar tenure-oriented frog`s eye view was prevailing (in Kargil and Galwan), which the adversary identified and exploited".

Staff Template. A formal template for each aspect of appreciation will encourage the officers to seek input and look outside their perspectives for unanswered queries. This Staff Duty Pamphlets provides adequate

learning to the new staff during training, but is also required to be utilised by the formations. Of course, the rigidity of the templates may not augur well with many commanders, but what is not realised is that the templates allow appreciation of all aspects, which the junior staff may not be able to visualise otherwise. The Staff templates have a hard copy structure that precludes automation and easy access to the junior staff and so the reports seldom follow a pattern. The formal structure of briefings at various forums may be constrained by time, but should not sacrifice the pedagogy. Counter-check of the staff data by senior staff, before inclusion into an appreciation, should be a mandatory step and staff obligation. Another essential step is to ensure the validity of various staff checks and appreciation templates. All formal document should have a retention period, beyond which its utility becomes confusing and untrustworthy. This 'retention period' should be printed on the document itself, to ensure that the addendums are automatically incorporated and not triggered by an annual event. Preparation of interim stencils at a formation level is also essential to share thoughts and actions and train the staff on it. This should be replaced by a formal document in a set time.

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Owning the Concept and Design. Encourage prescribed planning of both these aspects, especially design, utilising a formal template (to ensure complete inclusion of Tasks, Troops, Terrain, and Timing). Formal preparation of such documents by subordinate commanders will bring about ownership of the tactics and design, which are unique to each commander. This uniqueness will bring about tactical and technical surprises in the battles – which is the product of a vigorous commander's mind – not visible to any technology tool known to man, thus, truly unpredictable.

Encourage Innovative and Aggressive Thinking. The team should prepare to snatch initiative and retain it at all costs. Encouraging regular documentation of Enemy Patterns is an essential step to identify various intervention points to snatch initiative. This analysis is a critical input to prepare snap operations, exploiting the windows of opportunity. It will pay rich dividends, before contact phase. In the future, non-contact, non-kinetic sub conventional threshold initiative will remain an important competency for all commanders. Concurrently, identifying own vulnerabilities (in true sense) and creating methodologies to erase them should also form part of the operational frame work to discourage ad-hocism. Kargil has been an often quoted case, in which the deployment vulnerabilities were never truly eradicated.

Weapons can be Disruptive Tools too. Normally, disruptive nature is attributed to systems or technologies which upset the established system or technology. The email transformed the way of communication, displacing letter-writing and disrupting the postal services and greeting card industry. Social media networking has disrupted telephone, email, instant messaging and event planning. Can the weapons like Anti Material Rifles (12.7 and 14 mm) and Beretta's.338 Lapua Magnum Scorpio TGT and Barrett's .50-calibre M95[10] become disruptive too? With capability to hit at 1800m, the commanders have to utilise these weapons to disrupt enemy activities. With dedicated training schedules, improved and updated operational concepts in place, snipers can master the art of disruption and embracing a path of excellence, snipers can create a formidable force that leads the way to victory. Ideal training objective for disruptive shooting could be tactical drones, range finders, thermal imagers, generator sets etc, and the list is endless. Real disruption there.

Technology Demonstrators (TD) vs Innovation. Battlefields are technology intensive and incubate innovations – both tactical and technical. Innovation is the practical implementation of ideas/tools which results in the introduction or improvements of goods or services. It should mandatorily improve tactical results in the battles. The innovation is expected to provide the operational edge in the brilliantly visible

battlefields, surfeiting enemy's minds and plans. After all, 'the best computer out here, is still between our soldiers' ears'.[11] Every year, the Infantry Directorate creates a compendium of innovations that are selected after concept proofing by Commanding Officers. These must be formally inducted for operational deployment and will gain relevance beyond mere technology demonstrations, making a significant impact in the field. 3D printed tails fins have been found useful to 'guide' small bombs in Ukraine war.[12] Twitter handles have shown similar capabilities demonstrated by Indian forces too, it remains for commanders to now prepare a concept of use, mass fabricate the fins or aerodynamic sleeves and ensure compliance by all military units.

Empower the Thought

Future battles are a melange of seemingly unconnected events, unconventional in nature and unknown to the uninitiated. The commanders' minds have to resonate to such events and pull out the connections. Methodological inspirations will energise such creative and imaginative military thinking, driven by processes rather than persons.

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Indian Principles of War. Constituting Selection and Maintenance of Aim, Maintenance of Morale, Offensive Action, Surprise, Concentration of Force, Economy of Effort, Security, Flexibility, Cooperation, Simplicity, Administration, and Intelligence, provide major directions in war planning. These are indicative of 'offered battles' rather than 'prepared battles' and reactive in nature. With the onset of multi domain options, military could include Initiative as another principle. Seizing, exploiting and retaining the initiative allows military to impose its will on the enemy. It can also be transposed to Diplomatic, Informational, Military and Economic measures (as in DIME Operation). Initiative as an operational principle will disrupt enemy's Observe, Orient, Decide and Act (OODA) cycle and ability to fight coherent battles. This principle is more definite

when the enemy has propensity to act inconsistent as a stable state and unquestionably against a non-state actor. The degree of initiative is automatically controlled by the responsible nature of Indian central governance. The naysayers will argue that this principle incidentally exists within all others, but the difference lies in its primacy as an independent principle which dictates preparation of battle space much before the actual contact. It can efficiently stem out enemy operations during inception or at least act as a countervailing force.

War Gaming. It is organised with a specific aim to either train in tactical and strategic decision-making or to test new tactics and strategies or to predict trends in future conflicts. The formations generally tend to test tactics only. Yearly ritual of testing strategies and prediction of future should be introduced. Instead of onsite wargaming, there is a possibility of by mail 'Army Secure Indigenous Messaging Application (ASIGMA)' gaming in which the players send lists of moves, or orders, to each other through the mail. Utilising expertise of REDFORCE (ARTRAC), Army War College (AWC) and Think Tanks as a wargame control will reduce the formation's administrative load, permitting year-round exercises.

Cyber-Range. Cyber-Range is a scaled model[13] of the real world and users are simulated to better understand the state of cyber security. Cyber transcends all domains and the commanders have to safeguard it as any other. Like a firing range, a cyber range offers an environment and provides a controlled and interactive platform for cybersecurity professionals to learn and hone their skills in detecting and mitigating cyber-attacks. It employs the same equipment and infrastructure that they would use on the job to simulate the worst possible cyber-attacks on IT networks, software, and applications. It enables instructors to simulate targeted attacks and allows students to experience and apply defence techniques to defend against them. It could be in form of virtual lab or simulated physical table top environment.

Grey Zone and Own Options. The rapidly evolving nature of modern warfare has led to a paradigm shift in military thinking. Military leaders must now consider the possibility that almost any human endeavour could be weaponised and used to achieve a military effect. This includes not just traditional military assets such as weapons and troops, but also non-military entities such as social media, financial institutions, and other critical infrastructure. The rise of grey zone operations, which are designed to operate in the space between peace and war, has further emphasised the need for military leaders to be aware of the potential for non-traditional weapons and tactics. To effectively counter these threats, military leaders must be prepared to think creatively and adapt their strategies to the changing landscape of modern warfare. This requires a deep understanding of the potential risks and vulnerabilities associated with a broad range of human activities, and the ability to identify, and also adopt these capabilities to neutralise future adversaries.

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Negotiating End State. Future commanders will require to understand this critical aspect alongside planning conflict execution. Understanding 'National Level Negotiations' is a special competence. The military commanders and environment should be trained to understand and implement the higher table negotiations at any stage of battle. Conflict termination will not become an end state but an ever-present screenshot which may surface any time.

Consultation and Accretion. To improve competence and capability, commanders have to be ready to induct consultants, those who have speciality in a typical job. These may be from other services or departments. Russians had to requisition services of the Ukrainian scientists to manage the Zaporizhzhia Nuclear Power Plant. The consultants, personnel, and equipment will arrive from other services or even other ministries and departments to improve the operational outcome or to provide specialised service during detention operation. Well theorised and predefined concepts will ensure availability of common liaison, recall, requisition frameworks and job description.

Less is Enough. Militaries will always require plethora of weapons and equipment, which still will never be enough. USA produced 37,739 Javelin missiles in all and by November 2022 was left with 18,000 having given 7,000 to Ukraine and utilised a few for yearly training. It will take three years to receive another missile after firm order. Comparatively, Russians, after losing 1,300 armoured vehicles were left with 15,400 armoured vehicles on active duty and 18,500[14] in sheds. Similarly, out of 11,600 Stingers, USA was left with 8000 only, having given 2,000 to Ukraine, forcing USA to wait for five years to replace the stock.

Our commanders are likely to face similar constraints and to that end, the following merits attention:

- The numbers will never be enough and the commanders will always have to keep that in mind '100 guns per target' will not be a recurring feature. A minimal must has to be defined for an operation which should always be available. The production gestation and training requirements should also be numerically quantified. Such calculations have to be done for all in-service weapons, ammunition and equipment. Future procurement schedules may not materialise due to enemy's DIME Campaigns and thus should be considered for planning purposes. Supply chain procedures[15], stocking and delays have to be considered to control the overruns. All commanders have to consider these factors and be ready to 'fight with what you have rather than what you will get'.

- Counter Mobility tasks in the operation areas cannot be attempted during contact period. Assimilation of Anti-Infiltration Obstacle System (AIOS) as an obstacle, exploiting the typical

terrain features is a novel concept, which may be better than the traditional methodologies. This unconventional endeavour must be analysed for viability and implementation.

Long Look on Power. Taking the long view or big picture is not just about managing perceptions, but rather about shaping them; to target friendly elements; also hostile forces; and fence-sitters. This approach contrasts with the current trend of Sadbhavana, which focuses primarily on cultivating a positive image of the military. While it is important to project a benign image of the military, the hard power also needs to be projected equally well. A cursory glance at military-related Twitter handles illustrates this point. By taking a proactive approach to shaping perceptions and projecting hard power, military leaders can gain an edge over their adversaries and effectively protect their interests. This requires a strategic shift in the mindset, where the focus is on long-term planning and sustained efforts rather than simply responding to immediate threats. Through this approach, the military can become a more formidable force, better equipped to tackle the challenges of modern warfare.

> **While it is important to project a benign image of the military, the projection of hard power is conspicuously absent from Indian Army's effort.**

Can the Competencies be Quantified?

At the level of the commanders under discussion, there is no shortage of skills rather; there is no identifiable need of 'A Skill', albeit a definite need of group of related strengths, which is defined as a competency. A competency is a broader concept that combines Skills, Knowledge and Behaviour/Ability. While competencies may include a specific skill, they are more than just that skill alone. It is common to hear competencies referred to as 'the how' component of completing a task. How individuals perform the duties of their job - defines competency. The author is unable to identify any method other than the self-learning mode to generate a competency amongst theatre and operational commanders. Few options to empower should be assisted by formal processes:

- Enunciating a strategy and circulating to lower formation commanders as a formal proof of concept. All the units must understand their role in the battles. Counter Insurgency/Counter Terrorism (CI/CT) pre-eminence should not preclude the commanders from defining a series of military objectives, their military requirements and preconditions necessary to achieve each of them.

  • Capsules, Workshops, Online Discussions may also be considered as training methodologies for the commanders amongst themselves, without staff, to permit free flow of communication between peers, without fear of acceptability.

- Empower the competencies by inducting specialists as interns for Cyber and Social media analyses. An analysis by a PhD student on a certain subject will be more scholarly and better aligned to similar scrutiny by a greenhorn. Official Secrets Act permits necessary legal control of the information known to the intern upon departure from his contract.

How can Military demand Adaptability and Innovativeness in a Leader?

In future conflicts, the ability to adapt and innovate will be highly valued over adherence to tradition and repetition. The goal should be to retain the most diverse, well-rounded, and innovative leaders possible, rather than those who fit a traditional command mould. By embracing change and diversity, the military can cultivate the adaptability and innovation needed for success in future conflicts. This paper falls short of ideas and suggestions as to how to mandate adaptability and innovativeness, a vital trait for future commanders, but one aspect is definite – making it a check box in the annual assessment is a definite no-no.

Military Offensive Doctrine is Passé. Arzan Tarapore[16] theorises military's inviolable reliance on the punitive offensive doctrine and posits that "it is derided by the nuclear umbrella". He believes that advanced military technologies are forcing India into technology race, without having capability to be a competitor in it – at least for now. He proposes some 'relatively modest additional resources to ensure acceptance by the government.

- Pre-emptive strikes to make coercion and territorial aggression costly or unfeasible for the enemy. Tarapore's suggestions are highly valuable in case of Biological or Chemical attack (which are stealthy and highly deniable) and actions by non-state actors.

- Indian Army could consider becoming a supporting element of a joint force in multiple domains and different theatres to support a main effort elsewhere by other instruments of power.

- Consider joint combat with niche capabilities, developing long range, standoff, intelligence, surveillance, reconnaissance and precision strike capability.

- Adding non-contact and non-lethal capability to the military toolbox will make it more acceptable to the political leadership.

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Conclusion

Soldiers generally tend to be traditionalists and are not too enthusiastic in adopting new technologies. It is a realist attitude in an organisation where unproven technologies can result in catastrophic failures. However, readiness to accept newer norms is also quicker, owing to centralised control and strict hierarchical structures. Once the organisational approval of technology, concepts and tactics is enunciated, the militaries adapt quickly.

Responsibility to build trust structures rests with highest commanders, who propound doctrines and policies. While doctrine is a deep-rooted set of fundamental principles that guides the military, its application is based on sound and strong judgement of such senior military authorities, which should be formally and repeatedly conveyed to the subordinate organisations, especially when the higher document – National Security Strategy is not published. It is upon these shoulders, rests the responsibility to orchestrate and execute a campaign and evoke suitable strategies, which will entail informing and training the rank and file. The commanders of tomorrow have to ideate, and create befitting strategies which will befuddle the adversary at all stages. It is a tall order, for which the commanders have to re-educate themselves.

End Notes

1   Cole Livieratos and Tyler Skidmore, 'Preparing Army Leaders for Future War', 17 June 2022, https://mwi.usma.edu/preparing-army-leaders-for-future-war/accessed on 03 April 2023.

2   PK Mallick, 'Armenian – Azerbaijan Conflict over NK – Geopolitical Implications', Monograph, March 2021, VIF, New Delhi 2021, pp 22.

3   https://www.rferl.org/a/technology-tactics-and-turkish-advice-lead-azerbaijan-to-victory-in-nagorno-karabakh/30949158.html, accessed on 21 May 2021.

4   https://armenianweekly.com/2020/12/17/the-second-nk-war-lessons-learned-and-future-expectations/, accessed on 08 April 2023.

5   Craig W. Reynolds is an artificial life and computer graphics expert, who created the Boids artificial life simulation in 1986 after studying the flocking behaviour of birds, https://www.red3d.com/cwr/boids/ accessed on 10 November 22.

6   The phrase justifies the ideal flying altitude for commercial aircraft where it is most efficient to fly. Cyber security suggests this attitude for its highest management too. It encourages attention to the big picture and avoids distraction from the smaller details of a project. It suggests an emphasis on theory and concept rather than on implementation and procedure, implying familiarity with various aspects but not necessarily being a master of each.

7   Robert Anson Heinlein was an American science fiction author, aeronautical engineer, and naval officer, in the league of Isaac Asimov and Arthur C. Clarke, the Big Three of Science Fiction.

8   Comments to Cole Livieratos and Tyler Skidmore, 'Preparing Army Leaders for Future War', 17 June 2022, https://mwi.usma.edu/preparing-army-leaders-for-future-war/accessed on 03 April 2023.

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