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The Sacking of General Zaluzhny Brings to Fore Civil-Military Relations in Times of Conflict	Major General Jagatbir Singh, VSM (Retd)
Transition from Tactical to Strategic Leadership—Challenges, Shifting Roles and Responsibilities for Senior Military Leaders	Lieutenant General DP Pandey, PVSM, UYSM, AVSM, VSM
The Middle East in Flames	Major General (Dr) Atanu K Pattanaik, SM** (Retd)

Vol CLIV

JANUARY-MARCH 2024

No 635

USI LATEST PUBLICATION DURING 2024-2022

Pub Code	Title of Book & Name of Author	Price(Rs)	Year
Adm-Mil Ops/ 2024	"MILITARY OPERATIONS – Legal Framework for Multi-Domain Warfare" By Wg Cdr Umesh Chandra Jha (Retd) & Mr Kishore Kumar Khera M/s KW Publishers Pvt Ltd	1750	2024
P-39/ 2023**	"The Indo-Pacific Construct-India's Maritime Highway to Great Power Status" by Vice Admiral Anil Kumar Chawla, PVSM, AVSM, NM,VSM, PhD(Retd)	395	2024
M-1/2024**	"Present and Emerging Threats to National Security in Digital and Cyber Space – An Analysis of Security and Legal Issues" by Lt Cdr Bharat Singh (Retd) & Gp Capt Raja Singh (Retd)	395	2024
OP-1/2024**	"Optimisation of Professional Wargaming with Board and Tabletop Wargames which really are Qualitative Agent-based Models" by Lt Gen (Dr) SK Gadeock, AVSM (Retd) & Col Saikat K Bose	350	2024
Adm- SYB/23**	"STRATEGIC YEAR BOOK 2023" Editor-in-Chief Maj Gen BK Sharma, AVSM, SM & Bar (Retd), Editors Lt Gen GS Katoch, PVSM, AVSM, VSM (Retd), Gp Capt Sharad Tewari, VM (Retd) & Dr Jyoti Yadav	2250	2023
M-1/ 2023**	"India Tibet Relations (1947-1962)" By Mr Claude Arpi	395	2023
R-115/ 2023**	"Grey Zone Warfare : Way Ahead for India" By Lt Gen Dushyant Singh, PVSM, AVSM (Retd)	1450	2023
OP-1/ 2023**	"The Ukrainian Conflict : Heavy Metal still Rocks the Charts" By Maj Gen Jagatbir Singh, VSM (Retd) & Maj Gen VK Singh, VSM (Retd)	250	2023
OP-2/ 2023**	"The Great Helmsman and the Generalissimo : A Personal Feud That Endures" by Col Sanjay Kannothe, VSM	250	2023
OP-3/ 2023**	"Changing Operational Scenario and Evolving Rules of Engagement" by Wg Cdr UC Jha (Retd) and Gp Capt Kishore Kumar Khera (Retd)	250	2023
OP-4/ 2023**	"Empowering Commanders for Tomorrow" By Brig Pawan Bhardwaj	250	2023
OP-5/ 2023**	"A Joint Concept of Operations" By Air Marshal (Dr) Diptendu Choudhury, PVSM AVSM, VM, VSM (Retd)	250	2023
OP-6/ 2023**	"Orbat & Decorations For The Azad Hind Fauj" By Shri Neelotpal Mishra	350	2023
OP-7/ 2023**	"Analysing the Indus Waters Treaty 1960 : Beyond The Hype, Hoopla and The Hyperbole" By Col Anurag Jyoti and Prof (Dr) Raj Kamal Kapur	250	2023
OP-8/ 2023	First Lt Gen PS Bhagat Memorial Lecture "Legacy of Lt Gen Prem Bhagat – A Visionary and Strategic Leader" held at Manekshaw Centre on 14 June 2023. Compiled by Ms Tanya Jain	350	2023
OP-9/ 2023	Fourth General KV Krishna Rao Memorial Lecture "Theaterisation in Light of the Malayan Campaign and The Fall of Singapore in World War II" held at Manekshaw Centre on 29 Dec 2022. By General MM Naravane, PVSM,AVSM,SM, VSM (Retd)	350	2023
CS3/R-116/ 2023**	"Comprehensive Development of the Northeast – Window to India's Act East Policy" By Mr Jitesh Khosla, IAS Officer	1250	2023
Adm-UNPK/ 2023	"INDIA AND THE UN PEACE OPERATIONS- In Service of Humanity and Global Peace" By Col (Dr) Kulwant Kumar Sharma (Retd)	1880	2023
Adm- UNPO/ 2022	"Keeping the Peace –UN Peace Operations and their Effectiveness : An Assessment" by Maj Gen (Dr) AK Bardalai (Retd) M/s Pentagon Press	995	2022
Adm- UNPK/ 2022	"INDIA AND UN PEACEKEEPING : THROUGH THE PRISM OF TIME" Edited by Maj Gen PK Goswami, VSM (Retd) M/s KW Publishers Pvt Ltd	1880	2022

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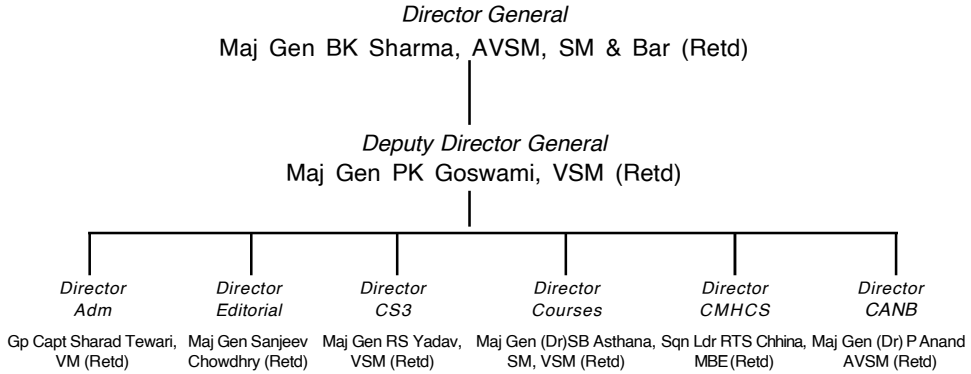
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SR-5	30 to 35	20,000	12,000	3,000	3,000	2,500

Notes -

1. 18% GST extra.
2. Armed Forces will be given 10% discount.
3. Banquet Hall Pavilion - Rs. 3,000/- per day.

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Editor

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1. The USI conducts correspondence courses for DSSC – Army, Navy and AF and DSTSC (Army) Entrance Examinations and Promotion Examinations Parts B and D.
2. The Courses have been remodelled to make it more interactive and the admission procedure has been simplified to make it user friendly.

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4. Schedule of Correspondence Courses 2023-24.

Courses	Commencement of Course	Date of Exam	Cost All Subjects	Cost Per Subject
(a) DSSC (Army)	3 rd Week of Nov 2023. Registration Open for 2024	Sep 2024	Rs 8000/-	Rs 3000/- for Tac B Rs 2000/- each for CA&MH Rs 1500/- for SMT Rs 1300/- for Tac A Rs 1200/- for Adm & ML
(b) DSSC (Navy)	1 st Week of Apr 2024	Jul 2024	–	Rs 3000/- for Paper-1
(c) DSSC (IAF)	3 rd Week of Jan 2024	Jul 2024	–	(i) Correspondence Course (aa) Rs 3000/- for HH (ab) Rs 3000/- for CA (ii) Online Course (aa) Rs 4000 for CA (ab) Other details are available in prospectus available on USI website
(d) Part B	2 nd Week of Dec 2023. Registration Open for 2024	Jun 2024 to Jul 2024	Rs 3000/-	Rs 1000/- each for Tac, CA & MH Rs 800/- each for Adm & ML
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1. USI welcomes original researched articles pertaining to national security, defence matters and military history for publication in the USI Journal. Articles should preferably not exceed 2,500 words. Along with the article, the author should forward abstract of the article not exceeding ten per cent of the total words. These should be forwarded as a word document on e-mail to the Editor, United Service Institution of India, on dde@usiofindia.org. In the e-mail the author should state that "the article titled (Title of Article) has neither been previously published in print or online, nor has it been offered to any other agency for publication. The Editor reserves the right to make alterations".
2. It is mandatory that the author furnishes complete details of the book/journal referred to in the article as end notes. A guide to writing endnotes is given on the next page. Besides endnotes, if the author so desires, a bibliography may also be included, though it is not mandatory.
3. The article should be in Arial Font, size 12 and English (UK). Avoid use of symbols like %, & and so on unless unavoidable to explain a point. The date style should be 24 Jun 2020, except in the citations where it will be Jun 24, 2020. Abbreviations, if any, should be used in their expanded form the first time and indicated in brackets.
4. The full name and address of the author along with a brief Curriculum Vitae should be given. Serving officers are advised to follow the prevailing Services instructions for publications of their articles.
5. The author will receive a copy of the issue of the Journal in which his/her article appears along with three offprints. A suitable honorarium will also be paid after the article is published.

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1. Endnotes are notes added to the main body of a paper or an article, in which the author directs readers to sources referred to or to add extra comments of his or her own. Endnotes are placed at the end of the paper/article. A superscript number (1,2,3,4) at the end of the sentence signals the reader to look for the corresponding endnote at the end of the article. The endnotes should be numbered consecutively, starting from '1'. Citations should include the author's name, title of the book (in italics), publishing information (in parenthesis) and pages consulted, all separated by commas. Citations should be in the Chicago Manual of Style (CMS) format. A quick reference is available at:

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- Some examples are given below:-

¹ Michael Baxandall, *Painting and Experience in Fifteenth-Century Italy : A Prime in the Social History of Pictorial Style*, (Oxford University Press, London, 1988), p. 45.

² Lina Bolzoni and Pietri Coral, *The Culture Memory*, (Bologna : Societa editrice Il Mulino, 1992), p. 45.

2. Use of *Ibid.*, *op. cit.*, and *loc. cit.*

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⁴ R Polrer, *Learning Physics*, (Academic, New York, 1993), p.4.

⁵ *Ibid*, p. 9.

⁶ T Eliot, *Astrophysics*, (Springer, Berlin, 1989), p.141.

⁷ R Millan, *Art of Latin Grammar*, (Academic, New York, 1997), p.23.

⁸ Elliot, *op cit.*, p148.

⁹ Elliot, *loc, cit.*

3. Where websites have been used to access information, the complete web address of the website should be cited, followed by the date the website was accessed by the author. e.g. Accessed Jun 24, 2020 from <http://www.fordham.edu/halsall/mod/1947degana.html>.

Additions to the USI Library for the Quarter Ending March 2024

During this period a total of 37 new books have been added. Details of the new books are available on USI Website.

Research Projects

Members interested in undertaking research projects may submit research proposals to USI (CS3/CMHCS). At present, ten Chairs of Excellence have been instituted in CS3; namely, Field Marshal KM Cariappa Chair, Admiral RD Katari Chair, Air Marshal Subroto Mukherjee Chair, Prof DS Kothari Chair, Ministry of External Affairs Chair, Flying Officer Amandeep Singh Gill Chair, General Bipin Rawat Chair, Lt Gen PS Bhagat Chair, Bhawanipur Education Society College (BESC) Chair, Assam Rifles Chair and three Chairs in CMHCS namely; Maharana Pratap Chair, Chhatrapati Shivaji Chair and USI-War Wounded Foundation Chair. Copies of the Rules for Award of Fellowship Grants and Conduct of Research are available on the USI Website.

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New USI Members

During the period Jan–Mar 2024, 30 registered as New Life Members; Six Ordinary Member renewed membership and 215 registered as new Ordinary Members.

Course Members

During Jan-Mar 2024, 640 Officers registered for Course Membership.

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NOTE

The views expressed in the Journal are the opinions of the contributors and the Editor, and are not necessarily official views or those of the USI Council.

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From the Editor's Desk

Dear Readers,

As we embark upon a new year, it is with great pride and a sense of responsibility that we release the first edition of the USI Journal for 2024. For over a century and a half, the USI has consistently provided readers and military personnel with an in-depth analysis on key issues related to national security, international affairs and geopolitics. This current issue includes 11 thoroughly researched articles addressing a variety of subjects. These range from charting a course for the tri-services and the nation for Multi-Domain Operations (MDO) to analysing the ramifications of Ukrainian General Valeri Zaluzhny's ousting, and the evolution from tactical to strategic leadership within the military's upper echelons. The issue also sheds light on recent events in the Israel-Palestine conflict and their wider effects on the Middle East. Featured as well are two articles on domestic defence production, highlighting Maintenance, Repair, and Overhaul (MRO) processes, and the integration of Artificial Intelligence (AI) in bolstering national security. Additionally, two articles scrutinise China's international diplomatic tactics and its sway over the global information realm. The role of cyber diplomacy in altering the landscape of global politics is also discussed. Concluding the journal are two analyses on the continuing Russia-Ukraine conflict, focusing on military tactics, techniques, and procedures, as well as the consequences for mechanised warfare.

The featured article, 'Multi-Domain Warfare: Are we Geared for it?' by Lt Gen Dushyant Singh, PVSM, AVSM (Retd), addresses how India finds itself entangled in multifaceted warfare encompassing various domains beyond the traditional land, sea, and air. The emergence of digital technology has further expanded the battlefield to include space, cyber, and information domains, demanding a paradigm shift in military strategy. The author makes a case for effective MDO to counter the warfare enacted upon India by the Pak-China nexus. Subsequently, Maj Gen Jagatbir Singh, VSM (Retd), in his article explores the implications of General Zaluzhny's ousting from his leadership role in the Ukrainian

military. His analysis brings to the forefront the potential strategic consequences that such an abrupt decision could have in the midst of the Ukrainian conflict, while also casting a light on the dynamics of civil-military relations and divergent approaches to military strategy during wartime.

The third article in the series, penned by Lt Gen DP Pandey, PVSM, UYSM, AVSM, VSM, is entitled 'Transition from Tactical to Strategic Leadership: Challenges and Shifting Roles for Senior Military Leaders.' This article delves into the complex journey that senior military officials experience as they transition from a focus on tactical operations to a broader, strategic leadership perspective with their advancement to higher ranks. The subsequent article, written by Maj Gen (Dr) Atanu K Pattanaik, VSM (Retd) and titled 'The Middle East in Flames,' examines the repercussions and wider geopolitical consequences of the 07 Oct attack on Israel by Hamas, as well as the inaction of the United Nations to successfully mediate the conflict and bring the hostilities to an end.

In the article 'A Case for Developing an Indigenous Drone Maintenance Repair and Overhaul (MRO) Ecosystem in India.' Rahul B. Wankhede emphasises the need for India to establish a domestic drone production and MRO network. He discusses the benefits and challenges associated with creating such an ecosystem and outlines the strategic approaches necessary for achieving autonomy in the drone MRO industry. The sixth article, 'Spread of the Chinese Dragon' by Maj Gen VS Ranade (Retd), surveys the strategic importance of the Indian Ocean Region as a focal point of international rivalry. The piece scrutinises China's initiatives, including the Belt and Road Initiative and the String of Pearls, aimed at broadening its regional sway. It further stresses the imperative for India to strategies against China's influence and spotlights the contributions of entities like Association of South East Asian Nations and the Quadrilateral Security Dialogue in supporting India's strategy to address China's expanding footprint.

In the following piece, 'China's Shaping of the Global Information Environment and Winning without Fighting', Col DCS Mayal discusses how China leverages its considerable financial resources and human capital to fulfil the worldwide need for cost-effective surveillance and communication technologies. This

strategy has allowed China to subtly exert its influence through information diplomacy. The article further explores how China's control over the information space has significantly improved its capacity to alter international narratives, utilising propaganda, spreading false information, and imposing censorship as tools that could enable it to prevail in conflicts without traditional warfare. The eighth article, 'Tiny AI: Atmanirbhar Approach to National Security', by Brig Pawan Bhardwaj and Col Gaurav Shahi, proposes the creation of sophisticated mapping systems featuring artificial grids to aid navigation. These systems would provide a dependable alternative for navigation in the event of failures in conventional communication and global positioning system technology, thus ensuring uninterrupted operations for government and military forces in the absence of standard navigation tools.

The ninth article in the journal, 'Cyber-Diplomacy: A Crucial Step Forward in the International Relations of India', authored by Dr Preethi Amaresh, delves into the profound technological evolution of the 21st Century and the increasing significance of emerging technologies in the realm of international relations. The author posits that 'Cyber Diplomacy' has become essential for maintaining effective communication between countries. She underscores the vital role of cyber diplomacy in safeguarding the integrity and longevity of cyberspace, particularly in the face of escalating cyber threats from various nation-states.

The final pair of articles are focused on the Russia-Ukraine conflict. Col Ratnadeep Das, in the penultimate article, uses the conflict as a case study to suggest changes in tactics, techniques, procedures and technology. He challenges the continued reliance on conventional military platforms and promotes the integration of advanced technology through a pragmatic approach to equipment and organisational reform to bolster combat proficiency. The last article by Col Kapil Khanduri, entitled 'Lessons from the Russia-Ukraine Conflict and Implications for Mechanised Operations in the Indian Context', analyses the impact of cutting-edge weaponry, the strategies of hybrid warfare, and the role of technology in modern combat. The piece offers valuable lessons and strategic considerations for India's mechanised infantry units.

In conclusion, this edition of the USI Journal presents a compelling array of articles that collectively offer a deep dive into current military and geopolitical challenges. Each article in this edition is a testament to the expertise and dedication of our contributors, who bring nuanced perspectives to the pressing issues of our time.

Following the articles section of the Journal, we proceed to the winning essay from the 2022 USI-War Wounded Foundation Joint Essay Competition written by Cdr Arun Kumar Yadav with the theme 'The State of War Wounded Personnel in India: An Appraisal'. This award-winning essay is grounded in thorough research into the circumstances of India's war-wounded servicemen and women. Drawing on the experiences of these individuals, the essay addresses the challenges they face and proposes strategies for facilitating their smooth transition from the recovery phase to the subsequent stages of their lives.

The final section of the Journal is collection of review article and short book reviews of the various books acquired by the USI library. These are:

- Camouflaged: Forgotten Stories from Battlefields by Probal Dasgupta; Reviewed by Maj Gen Jagatbir Singh, VSM (Retd).
- The Dragon's Bite: Strategic Continuum and Chinese People Liberation Army's Evolving Fire and Teeth by Maj Gen Rajiv Narayanan; Reviewed by Dr Roshan Khanijo.
- China: Courts, Criminal Law and Criminal Law Procedure by Wg Cdr UC Jha; Reviewed by Gp Capt Sharad Tewari, VM (Retd).
- India and the UN Peace Operations: In Service of Humanity and Global Peace by Col (Dr) KK Sharma (Retd); Reviewed by Maj Gen (Dr) AK Bardalai (Retd).
- The Legacy of Shivaji the Great: Military Strategist, Naval Supremacy and the Maratha Empire by Col Anil Athale; Reviewed by Col Ravinder Kumar Sharma (Retd).

- The Army Way by Sartaj Kaur Chaudhary; Reviewed by Ms Komal Chaudhary.
- Maritime Operations Law by Wg Cdr (Dr) UC Jha and Kishore Kumar Khera; Reviewed by Vice Adm AK Chawla, PVSM, AVSM, NM, VSM (Retd)

In closing, we extend our heartfelt gratitude to the Indian Council of Social Science Research for their financial support, without which this endeavour would not be possible. We hope that this edition of the USI Journal serves as both a repository of wisdom and a beacon that guides us through the complex terrain of national security and geopolitics.

As always, we look forward to your feedback and suggestions. Happy reading, and may the discussions within inspire and provoke thought as we navigate the year ahead.

Major General Sanjeev Chowdhry (Retd)
Director Editorial

Multi-Domain Warfare: Are we Geared for it?

Lieutenant General Dushyant Singh, PVSM, AVSM (Retd)[®]

Abstract

In the face of evolving geopolitical threats, particularly from neighbouring nuclear states like China and Pakistan, India finds itself entangled in multifaceted warfare encompassing various domains beyond the traditional land, sea, and air. The emergence of digital technology has further expanded the battlefield to include space, cyber, and information domains, demanding a paradigm shift in military strategy. This article explores the concept of multi-domain operations as a comprehensive approach to address these complex security challenges.

Introduction

Compared to the past, revolutionary changes have transformed the landscape of warfare, driven primarily by a technological tsunami. Game-changing inventions and developments in military technology, from dynamite, telecommunication, tanks, and aircraft to nuclear weapons and space-based systems, have now culminated in a digital technology revolution. While the pace of technological changes was moderate in the past, the advent of digital technology has unleashed a storm in warfighting. Warfare is no longer confined to single dimensions such as land, sea, and air; it has expanded to include dimensions like space, cyber, robotics, and the human mind space, characterised by influence operations aimed at breaking the morale of the adversary's warfighting human capital many a times without engaging in direct

[®]Lieutenant General Dushyant Singh, PVSM, AVSM (Retd), is a distinguished military leader with extensive experience in various operational theatres. He held key positions, including commanding an infantry unit, brigade, and division, and served twice in the elite National Security Guards. The General is also a respected author and strategic analyst, contributing to defence journals and publishing notable works like 'Grey Zone Warfare: Way Ahead for India'. Recognised with prestigious awards such as the 'Ati Vishisht Seva Medal' and 'Param Vishisht Seva Medal,' he continues to make significant contributions to national security discourse as a prominent figure publishing in Journals think tanks and academic institutions. Presently he is the Director General of the Centre for Land Warfare Studies, a think tank under the aegis of the Indian Army.

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conflict. India is constantly subjected to all these forms of warfare by its adversaries.

The major national security threats against India primarily emanate from its two neighbours, China and Pakistan. In addition to this, the country is targeted through Information Warfare (IW), covert operations, economic warfare, and diplomatic manoeuvrings by countries or non-state actors and agencies that do not wish to see it emerge as a major power. Furthermore, there are elements within the country that receive support from external agencies and the deep states of other countries. They use tactics such as IW, terrorism, protests, and unrest to create internal security threats, aiming to weaken the social fabric, morale of the people and security personnel, and influence regime changes. Several international powers, both state and non-state actors, aspire to keep India weak and dependent on them for survival. These realities necessitate a response employing a 'Whole of Nation Approach'. However, this also underscores the need for an effective Multi-Domain Operations (MDO) strategy to defend India against this form of warfare employing its defence forces and employing hard and soft power using the Whole of Nation Approach. Multi domain operations are no more the preserve of only the defence forces.

Understanding MDO

The traditional domains of warfare have been land, sea, and air. Over a period, cyber and space have emerged as two other domains of warfare. To counter Multi Domain Warfare (MDW) there is a need to undertake MDO. It refers to a military concept that aims to integrate operations across multiple domains, including land, air, sea, space, and cyberspace.¹ The aim of MDO is to achieve results in the most cost-effective manner by leveraging the advantages of each domain to gain a decisive victory over the adversary. MDO aims to combine the capabilities across all domains and employ them ideally in an integrated manner to achieve the desired effects as far as the military domain is concerned. As far as adversarial action in the economic, information and diplomatic spheres is concerned, a Whole of Nation Approach is desirable. Figure 1 highlights this aspect quite vividly. "It is in this realm that the three services will have to evolve the multi-domain concept i.e., by first understanding how space and cyber domains will contribute to war fighting and then identifying the

doctrine and capability required for their integration. Thereafter, redefine concepts of operations, command and control approaches, organisational structures, force structures and support structures. Once identified, an institutional process would be required to put it all together and define the required reforms or changes/adjustments".²

An important precondition that is needed for an MDO to become effective is the establishment of a sound network that extends across all five domains including the three services to achieve a high degree of integration to ensure building up of a common operational picture to effectively engage the adversary through a combination of systems and elements that may be from different domains including the cyber and space beside the land, sea, and air. Therefore, the aim of any MDO would be to shorten the Observe, Orientate, Decide, Act loop.³ A major challenge that is associated with integrating the cyber and space domain is that, it will face a similar challenge in that the three services are likely to create their own dedicated space and cyber resources whereas a more prudent thing would be to create separate cyber and space services which then provides the necessary cyber and space support to the three services. This is a similar problem to that of Air Power resources being shared by the other two services.⁴ These complexities notwithstanding will have to be laid down in workable policies, structures, and communication networks to fight as a joint team.

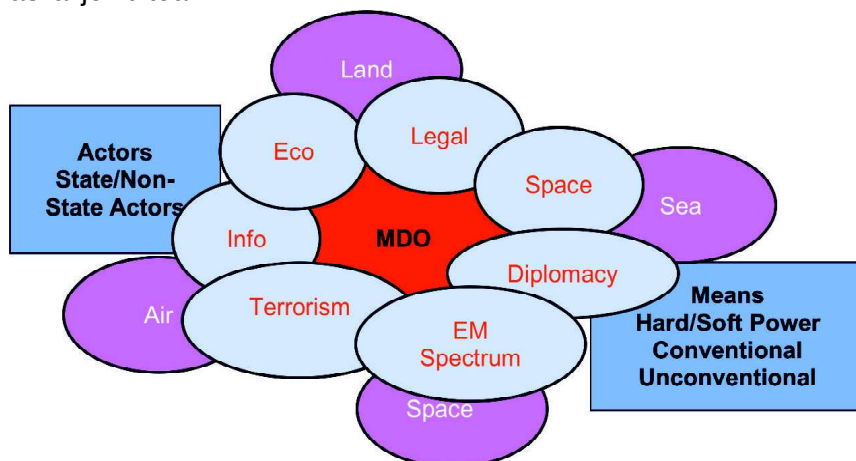


Figure 1: The Overview of Multi Domain Warfare in Current Context.
Source IMR in Article of Maj Gen GD Bakshi, SM, VSM (Retd)

Geopolitical Landscape

India shares borders with multiple countries, each presenting unique challenges. Two of India's neighbours are recognised nuclear states with significant military capabilities. According to the 2024 Global Fire Power Index, China ranks as the third most powerful military globally, and Pakistan holds the ninth position.⁵ In a collusive threat eventuality, India will have to pull out all its punches to meet the challenge. In such an asymmetrical situation, MDO may be able to offset the disadvantages. Beyond conventional military threats, these adversaries also attack national infrastructure including military assets, infrastructure and warfighting resources through cyber-attacks. Our adversaries are also using IW, proxy warfare by employing terrorists in peace time which is likely to extend into war time as well given our past experiences and ongoing conflicts in Ukraine and Gaza. Their activities extend to the covert domain, aiming to undermine our national unity, sovereignty, and social cohesion which need to be addressed at the national level, leaving the defence forces to tackle security challenges emanating from the five domains.

In addition to these two adversaries, neighbouring countries China consistently influences other neighbours of India like Nepal, Bhutan, Myanmar, Maldives, and Sri Lanka through various means such as diplomacy, interference in the elections, covert operations, and economic enticements. China consistently aims to undermine Indian influence in South Asia and to impose its own influence. Recent instances include China's efforts to influence the elections in Maldives, leading to the establishment of a pro-China government under Muizzu.⁶ In Bangladesh, China displayed relative restraint, not overtly interfering in elections. Instead, it was the West, led by the United States, actively pressuring the Bangladesh government in the name of conducting free and fair elections to engineer a regime change. Despite these efforts, Sheikh Hasina returned to power, thwarting the objectives of China and Pakistan. Similar instances of achieving strategic goals through diplomacy and non-military means exist in Nepal, Bhutan, Sri Lanka, and Myanmar.

Notably, in Sri Lanka, China made significant inroads by first installing a pro-China government led by Rajapakse and subsequently acquiring Hambantota through the Belt and Road Initiative debt trap.⁷ Addressing these multifaceted threats requires

India to adopt a multidomain approach, considering various dimensions and domains. MDW enables a comprehensive strategy to counter threats from different directions.

Tri-service Integration

The Indian Armed Forces have traditionally operated in a tri-service manner with the Army, Navy, and Air Force. As discussed above, while coordinated efforts across these services are vital for effective multidomain operations, cyber and space domains are assuming a decisive edge in the outcome of battles. Therefore, we need to decide whether there is a need to raise independent commands for marshalling space and cyber resources which can then be allocated in an optimised manner to the three services as also to undertake operations on their own at a strategic level as part of Whole of Nation Approach. The People's Liberation Army Strategic Support Force (PLASSF) is an example of this model. The PLASSF is comprised of two divisions: The Space Systems Department, which is responsible for undertaking all space-related missions, and the Network Systems Department, which has the People's Liberation Army's IW activities, including cyber.⁸ While India cannot ape the model, it can take the concept and create changes in the apex structure of the defence forces which could function under the Chief of Defence Staff (CDS).

Integration of MDO Effort: Need for a PLASSF type Organisation.

Achieving integration among the five domains through a sound net centric effective communication architecture is necessary for an effective MDO. In addition, integration also involves enhancing interoperability and cooperation among the three services. This includes joint planning, joint training, and joint exercises to ensure seamless integration during multidomain operations. To achieve these integrated theatre command structures backed by human resources that have experience of operating in a joint environment is a pre-requisite. Accordingly, the three services must resort to cross postings amongst the three services by identifying suitable billets besides those held in existing tri-service organisations such as the Andaman and Nicobar Command and the Strategic Forces Command. In addition, there is a need to gradually shift to integrated theatre command architecture to conduct an MDO.

Investments in advanced technologies, such as space-based capabilities, cyber warfare, and unmanned systems, are crucial for gaining a competitive edge in multidomain operations. India has been working on developing indigenous technologies in these domains. While efforts at the national level are well appreciated, at the tri-service level too, there is an urgent need to create an overarching organisation that can take care of the lines of military operations in the various domains and dimensions related to cyber, space, intelligence, and information operations. This can be achieved by expanding the mandate of the existing Defence Intelligence Agency (DIA) under the CDS.⁹ The organisation could be rechristened as National Military Strategic Support Operation Agency (NMSSO). Organisations such as the Defence Cyber Agency (DCA), Space Vertical and the IW Vertical including the organisation of the three services dealing with public relations could be assimilated under it to suit the Indian defence requirement in this field. Similarly, the Defence Space Agency (DSA) could also be placed under this proposed organisation. Some of the critical issues are discussed below. These are discussed very briefly below:

- **Cybersecurity.** As cyberspace becomes increasingly important in modern warfare, India needs to focus on robust cybersecurity measures. Protecting critical infrastructure and ensuring the security of communication networks are integral components of multidomain warfare. The proposed organisation should assimilate the existing DCA working under the Headquarters Integrated Defence Staff. The proposed organisation needs to coordinate its efforts with various national level agencies responsible for cyber security through the National Cyber Security Advisor and Deputy National Security Advisor who are responsible for coordinating such efforts, so that the proposed Strategic Support Force efforts are not at variance with those undertaken by the military.
- **Space Domain.** Given the significance of space-based assets for communication, navigation, and surveillance, India has been working on enhancing its space capabilities. Developing counterspace capabilities and securing space-based assets are vital components of multidomain warfare. As discussed above the existing DSA can be merged under the NMSSO.¹⁰ Besides this must beside look at the internal

requirements of the defence forces who could undertake operations through the concerned Deputy National Security Advisor/Military Advisor in the National Security Council and the Director General of the Indian Space Agency.

- **Diplomacy and IW.** IW plays a critical role in shaping perceptions and influencing decision-making. Integrating diplomatic efforts with IW is essential for managing international perceptions during conflicts. The proposed organisation above NMSSO with the existing DIA component already has the Military Diplomacy component. In addition, it could also include the IW vertical under it with the Additional Director General Stratcom (erstwhile Additional Directorate General of Public Information) equivalent of all the three services under it to minimise turbulence in the transformation.

Human Capital Development

The success of MDW relies on well-trained and adaptable personnel. Continuous training and professional development are essential for military personnel to operate effectively in diverse and dynamic environments. Accordingly, as discussed earlier, joint billets in all three services will fill up all the vacancies in the existing tri-service organisations. Along with this gradual shift towards theaterisation, it will further enhance the effectiveness of the skill levels of the human resource besides making it easier to operate effectively in a multi domain operational environment.

Other Operations Requiring MDO Response

Counterinsurgency and Counterterrorism. Internal security threats, such as insurgency and terrorism, require multi-domain approaches that include intelligence, cyber capabilities, and precision strikes. India has been a victim of terrorism since independence such as in Jammu and Kashmir (J&K), Northeastern States and Naxal infested states in the red corridor of India spanning Bihar, Jharkhand, Chhattisgarh, Odisha, Maharashtra, Telangana, and Andhra Pradesh. The military needs to work in coordination with other security agencies to address these challenges effectively. MDO will greatly enhance the effectiveness of Indian operations. An example is the use of land, air, cyber, and space resources by the defence forces. Another example that

stands out of MDO to counter terrorism is the Balakot strike by air in J&K sector. Similarly, aerial resources, land resources and cyber resources can be utilised to augment the other security forces more seamlessly in a multidomain environment backed by sound net-centric environment that has an interface, if required, with the non-military security forces and agencies.

Amphibious/Hybrid Capabilities along the Coast/Island Territories

In the maritime domain, with a long coastline, number of island territories and maritime interests, the Indian military needs to maintain strong amphibious capabilities. This involves the integration of land and naval forces for operations in littoral zones. In addition, the cyber and space resources would also get involved while dealing with conventional and hybrid threats. Coupled with the need for amphibious operations the hybrid threat may need a combined land, air, space and cyber response.

Conclusion

India is subjected to multiple threats ranging from conventional to unconventional, military to non-military and contact to non-contact. The nature of conflict is gradually shifting from a black and white texture to grey with wars and conflicts extending into the space of war to even the peace time. With grey zone war now being conducted by our adversary during peace and war through multiple means the response must adapt and respond by kinetic and non-kinetic measures. Therefore, MDW is crucial for India to address the security challenges confronted by India. The integration of capabilities across land, sea, air, space, and cyberspace, along with a focus on technological advancements and integration, will enhance India's ability to respond to a wide range of security challenges. There is a need now to create a national military strategic support organisation or agency under the CDS to meet these challenges. The proposed organisation should have cyber, space, information, military diplomacy, and intelligence components under its command.

Endnotes

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⁷ Abeyagoonasekera, A. (2023, May 03). The Communist Party of China and Its Political Influence in Sri Lanka under the Gotabaya Rajapaksa Regime. Retrieved January 2024, from CSEP: <https://csep.org/reports/the-communist-party-of-china-and-its-political-influence-in-sri-lanka-under-the-gotabaya-rajapaksa-regime/>

⁸ Epstein, A. J. (2022, Dec 23). The PLA's Strategic Support Force and AI Innovation. Retrieved Jan 2024, from Brookings.edu: <https://www.brookings.edu/articles/the-plas-strategic-support-force-and-ai-innovation-china-military-tech/>

⁹ Singh, D. (2023). Grey Zone Warfare : Way Ahead for India. New Delhi, India: Viz Books New Delhi.

¹⁰ ibid

The Sacking of General Zaluzhny Brings to Fore Civil-Military Relations in Times of Conflict

Major General Jagatbir Singh, VSM (Retd)[®]

Abstract

The Ukrainian President recently announced the removal of General Valerii Zaluzhny from the command of the military. Ukraine has, till now, enjoyed relative stability in its military ranks compared with Russia. The removal of General Zaluzhny poses strategic risks at a time when Russia has intensified its attacks and western security assistance for Kyiv has slowed. It also poses risks, including a disruption to operational planning. Despite the announcement of a detailed action plan for the future, there is a need to account for the uncertainty around the pace and quantity of western weapons and the challenges in recruiting new soldiers to the fight. The newly appointed General confronts the same challenges as his predecessor, many of which are out of his control, including Ukraine's dependence on Washington for aid. The dismissal, however, brings to the fore civil-military relations in times of conflict and the differing perceptions on how to conduct war.

Introduction

On 08 Feb, Ukrainian President Volodymyr Zelenskyy announced that he was removing General Valerii Zaluzhny from command of the military and promoting General Oleksandr Syrskiy, the Commander of the Ukrainian Ground Forces, to replace him. "I thanked him for two years of defence of Ukraine", President Zelenskyy said on social media, adding: "We also discussed who could be in the renewed leadership of the armed forces of Ukraine".¹

[®]Major General Jagatbir Singh, VSM (Retd) is a Distinguished Fellow at the USI of India. Commissioned in 1981 into the 18 Cavalry, he has held various important command and Staff appointments including command of an Armoured Division.

General Zaluzhny, had gained enormous credit for spearheading the successful effort by Ukraine's forces to halt and then reverse Russia's initial attack launched on 24 Feb 2022. He was appointed Commander-in-Chief in Jul 2021, just half a year before Russia launched its all-out invasion.

The Armed Forces of Ukraine under his leadership had succeeded in pushing back initial Russian advances near the capital Kyiv, and then led successful counteroffensives later in 2022, freeing parts of Eastern and Southern Ukraine. Both General Zaluzhny and General Syrskyi played key roles in those campaigns.

The dismissal ended weeks of speculation about the fate of General Valerii Zaluzhny, whose relationship with President Zelenskyy had deteriorated and there were strong rumours regarding his exit.²

Friction has Been Brewing

The Ukrainian forces under General Zaluzhny had contained the initial Russian onslaught. That was a great achievement because almost everybody, expected the Russian forces to steam roll their way across the plains of Ukraine. But lately his record has been tarnished by the failure of last year's counteroffensive, which ran into well-prepared Russian defences.

Last year's highly anticipated Ukrainian counteroffensive, using soldiers trained by North Atlantic Treaty Organisation allies and with western weapons and equipment, reclaimed little territory, falling far short of expectations. The Ukrainian counter offensive last year led to a blame game in Washington, with the United States (US) military, and some Ukrainians, suggesting that if General Zaluzhny had taken their advice and concentrated his forces to attack on a narrow front (rather than attacking in several places simultaneously), the Ukrainians could have broken through.³ But the way to fight the battles should come from the innate genius of a committed Ukrainian military. The conduct of operations cannot be dictated by the outside nations providing some equipment.

Strangely, it was because of such attacks on narrow fronts that the Russian Army tried several times immediately following the invasion, and that led to repeated disasters. It ignores the fact that just as US satellite intelligence allowed the Ukrainians to

identify local Russian concentrations and concentrate in turn, Russian satellite intelligence would do the same when the Ukrainians were attacking.

Adding to this is the irrational decision by the Ukrainian forces to launch a counteroffensive straight into well-prepared defences. The truth is that by the summer of 2023, the Ukrainian Army simply did not have the superiority in manpower and firepower that would have allowed it to break through heavily fortified lines manned by a well-armed enemy. To have succeeded against these odds would have been an exceptionally unusual event in military history. Nor is there any significant prospect that the Ukrainians will be able to succeed in the future; for even if they receive new western weaponry over the next year, Russia will be using the year to further fortify its defensive lines.

The dispute is not over who has done more for victory, but over who is most to blame for the fact that the turning point in Ukraine's favour never came.⁴

The President and General Zaluzhny also increasingly differed over strategy and there was the underlining fear that General Zaluzhny's increasing popularity both within the military and among ordinary citizens, made him a potential political threat to the presidency. A poll by the Kyiv Institute of Sociology found that 88 per cent of Ukrainians supported the general. President Zelenskyy's approval rating, though also high, was markedly lower at 62 per cent.⁵

But of all the reasons mentioned, it is the difference regarding the new conscription law that would increase the size of the military. There was a reported disagreement about how many soldiers Ukraine needs to mobilise this year.

General Zaluzhny proposed mobilising close to 5,00,000 troops, a figure Zelenskyy viewed as impractical given the scarcity of uniforms, guns and training facilities and the potential challenges related to recruitment.

President Zelenskyy said publicly that Ukraine lacks the funds to pay so many new conscripts. General Zaluzhny countered that Ukraine is already short of forces because of mounting casualties and needs to match 4,00,000 new soldiers that Russia plans to mobilise. In an opinion piece for Cable News Network (CNN)

General Zaluzhny wrote about “The inability of state institutions in Ukraine to improve the manpower levels of our armed forces without the use of unpopular measures”.⁶

A lesson of this war is that victory depends on a combination of the most recent weaponry with large numbers of fighting soldiers. In 2022, Russian defeats were largely attribute due to the fact that they invaded with too few troops. The Ukrainian success in Kharkiv in Sep 2022, owed much to the fact that on that front they considerably outnumbered the Russians.

It is also reported that an essay for the Economist last year infuriated President Zelenskyy, as General Zaluzhny compared the state of the conflict to a stalemate like the First World War. General Valery Zaluzhny said, “Just like in the First World War we have reached the level of technology that puts us into a stalemate”. He also stated that it would take a massive technological leap to break the deadlock. “There will most likely be no deep and beautiful breakthrough”. This grim view of the war, clashed with President Zelenskyy’s effort to show that Ukraine is making good progress in order to ensure that Ukraine’s allies stay committed.⁷

In a CNN article, General Zaluzhny suggested that Ukraine’s leadership had not tackled problems in the defence industries, which had led to production bottlenecks and ammunition shortages. He warned that Ukraine was now having to “Contend with a reduction in military support from key allies” as they have become ensnarled by their own political tensions and distracted by conflicts elsewhere. He said the best way for Ukraine’s army to avoid being drawn into a ‘Positional War’, in which fighting is conducted along permanent and fortified frontlines, is for Ukraine to ‘Master’ unmanned weapons systems or drones, which he called the “Central driver of this war”.⁸

Colonel Oleksandr, a battalion commander fighting in Eastern Ukraine has been quoted in the Washington Post as saying; “My personal opinion is you can’t do something like this right now Zaluzhny is someone 80 per cent of the military considers a good authority”. “This is a catastrophic step”, he said “The morale of both the military and society will go way down”.⁹

The New Commander-in-Chief

General Oleksandr Syrskiy, the 58-year-old Commander of Ukraine's Ground Forces, who is the new Commander-in-Chief was credited with leading the defence of Kyiv in the first month of the war and then orchestrating a successful counteroffensive in the Northeastern Kharkiv region in 2022.

General Syrskiy, was born in Central Russia and his parents still live there. He attended a Military Training Academy in Moscow and began his soldiering career during the last years of the Soviet Union, training in Moscow. With Ukraine's independence in 1991, he rose through the ranks of the Ukrainian Armed Forces becoming a Major General in 2009. He played a prominent role in Kyiv's fight against Russia's invaders in the Eastern Donbas region in 2014 and 2015. Two years later, he became the commander of all Ukrainian forces involved in anti-terrorist operations, as the conflict with Russia in Eastern Ukraine became known. But as per a report in the Washington Post, he is especially disliked, among rank-and-file soldiers, as he is considered by many to be a Soviet-style commander who kept forces under fire too long in Bakhmut when Ukraine should have withdrawn. As per the Financial Times, some analysts have expressed misgivings about General Syrskiy's decision-making since Feb 2022 and concerns over his ability to resist political interference in operational matters.¹⁰

Civil-Military Relations

In times of war, civil–military relations have often come to the fore due to the differing perceptions. George Clemenceau, the French statesman who served as Prime Minister of France from 1906 to 1909 and again from 1917 until 1920 “War is too serious a matter to leave to soldiers” as quoted in Clemenceau and the Third Republic (1946) by John Hampden Jackson, p. 228. This has also become commonly paraphrased as: ‘War is too important to be left to the Generals’. The statement is correct but not in its entirety as the reverse is also true.

During the Korean War, President Truman scrawled in his diary on 06 Apr 1951, “This looks like the last straw”. This was after General Douglas MacArthur, had gone public with his differences with the President over the conduct of the war—this time in a letter to House Republican Leader Joseph Martin.

President Truman thought it was nothing less than 'Rank Insubordination', and five days later he relieved MacArthur of his command and replaced him with General Matthew Ridgway. "With deep regret I have concluded that General of the Army Douglas MacArthur is unable to give his wholehearted support to the policies of the US Government and of the United Nations in matters pertaining to his official duties", the President said.

Truman favoured a 'Limited War'. General MacArthur, however, publicly advocated the more expansive use of American military power, including the bombing of China, employment of Nationalist Chinese Forces from Formosa (now Taiwan) and the possible use of nuclear weapons. Fearing that such an approach risked a massively expanded war in Asia and even the start of World War III, with the Soviet Union coming to the aid of China, Truman clashed repeatedly with MacArthur before finally dismissing him.

Truman's decision had far-reaching implications beyond just the conduct of the Korean War, according to H.W. Brands, author of 'The General vs. the President: MacArthur and Truman at the Brink of Nuclear War'. "I think the enduring legacy is that Truman took a great political risk, and he did it immediately to prevent World War III, but also to prove the principle that civilian elected officials are above military officials".

Truman's decision not only ended MacArthur's military career, but it also ended the President's political career, setting the stage for the subsequent Presidency of Dwight Eisenhower.

In the Indian context, 1962 stands out as a conflict where civilian officials were accused of meddling in military affairs. The Indian Army's defeat in the war was blamed, largely, on misguided civilian interference. In fact, Prime Minister Nehru's government has been blamed for implementing the 'Forward Policy', which weakened the military's capacity to defend India against the Chinese. The conflict exposed the civilians' lack of sufficient military knowledge which included the Defence Minister Krishna Menon and the military leadership represented by Lieutenant General BM Kaul, compromised themselves when dealing with the threat of China. In this case, the ramifications of the war ended the careers of both.

Konstantin Skorkin, a Russian journalist has said that “President Zelenskyy had invested all of his global media authority in the idea of an imminent victory for Ukraine as a result of a successful counteroffensive. After the failure of that counteroffensive, he felt deceived by the military. It became clear that the Ukrainian president was no longer willing to tolerate an independent Commander-In-Chief, or indeed the autonomy of the Army as a whole”. Writing in Carnegie he stated, “The circumstances of the general’s departure do leave the impression of a President who is overreaching his hand by more or less openly putting narrow and selfish interests before considerations of state”.¹¹

The Future

The upheaval comes at a difficult moment for Ukraine in the war, amid intensified Russian attacks, wrangling in the US over providing aid to Ukraine brings to the fore the tensions between Kyiv’s civilian and military leadership. Change of command in the midst of an ongoing conflict is best avoided lest it conveys negative signals to the lower echelons of command

Proposed aid for Ukraine has stalled in Washington and Brussels because of internal political disputes in the US and the European Union. House Republicans have blocked a White House request for an additional USD 60 bn related to the war in Ukraine.¹² But what lesson stands out is that it is difficult for a nation to fight its territorial war with a mix of equipment coming from other countries and that too limited in numbers.

General Zaluzhny’s removal also poses strategic risks at a time when Russia has intensified its attacks and western security assistance for Kyiv has slowed. The general has built strong rapport with his western counterparts and has often been able to advocate directly for certain material and seek counsel on battlefield strategy.

The decision to remove the senior military leadership in the midst of conflict poses risks, including a disruption to operational planning. But President Zelenskyy said, “A new command team must begin by laying out a detailed action plan for the year ahead”. However, the future plan will need to account for the uncertainty around the pace and quantity of western weapons and the challenges in recruiting new soldiers to the fight. There is no

doubt that post the 07 Oct Hamas attack on Israel, the focus of the western powers has shifted, and this is affecting aid to Ukraine.

General Syrskiy has announced 'New Tasks', including speeding up weapons deliveries, rotating units and investing more heavily in strategies like drones and electronic warfare. "Only changes and constant improvements of the means and methods of warfare will make it possible to achieve success on this path", he wrote on Telegram. But he will confront the same challenges as his predecessor, many of which are out of his control, including Ukraine's dependence on Washington for aid ¹³

Conclusion

General Zaluzhny posted on Facebook: "A decision was made about the need to change approaches and strategies. The tasks of 2022 are different from the tasks of 2024. Therefore, everyone must change and adapt to new realities as well". He added a picture of him and the President shaking hands and smiling. He was also awarded the title of hero, according to an executive order published on the Ukrainian President's website.¹⁴

Ukraine's Defence Minister Rustem Umerov thanked General Zaluzhny for his 'Achievements and Victories', but added: "Battles 2022, 2023 and 2024 are three different realities. 2024 will bring new changes for which we must be ready. New approaches, new strategies are needed".

As per David Silbey of Cornell University, "The heavy casualties that went along with the trench war has sapped Ukraine of troops and the political infighting in the US is threatening material support for the Ukrainian war effort. Zelenskyy cannot control any of that, but he can control who commands Ukraine forces, and so he fired Zaluzhny. It's a sign of desperation more than calculation".

Until now, Ukraine has enjoyed relative stability in its military ranks compared with Russia. Russian President Vladimir Putin had named General Valery Gerasimov to the top job one year ago, dismissing General Sergei Surovikin, who had been in the post for just three months.

"The Kyiv regime has many problems, and everything has gone wrong there, that's for sure", Kremlin spokesman Dmitry Peskov said on 07 Feb when asked about General Zaluzhny's

possible dismissal. “Obviously, the failed counteroffensive and problems at the front increase the disagreements between members of the Kyiv regime”.

The dismissal however brings to the fore civil-military relations in times of conflicts and the differing perceptions on how to conduct war. It appears that General Zaluzhny was not willing to force attacks without actual equipment and reserves to keep up appearances.

Endnotes

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Transition from Tactical to Strategic Leadership—Challenges, Shifting Roles and Responsibilities for Senior Military Leaders

Lieutenant General DP Pandey, PVSM, UYSM, AVSM, VSM®

“Whatever action a great man performs, common men follow.
And whatever standards he sets by exemplary acts,
all the world pursues”.¹

Bhagavad Gita 3.2

Abstract

This article delves into the complex journey of senior military leaders as they navigate the path from tactical proficiency to strategic leadership, exploring the challenges and the critical changes they encounter, in the roles and responsibilities that accompany this transition. Strategic leadership involves making decisions that affect the military's overall direction and long-term goals. Tactical leaders are responsible for ensuring that units effectively achieve their goals within the scope of their assigned tasks. However, the modern environment of national security adopts a 'Whole of Nation Approach' which has to be embraced and adopted by military leaders at all levels. Today's senior military leaders must be able to seamlessly traverse the spectrum from tactical execution to strategic thinking, while leveraging the tools and information available in the modern era.

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Introduction

In the ever-evolving landscape of the modern military, the transition from tactical to strategic leadership is a crucial and challenging endeavour. Senior military leaders, those who have demonstrated excellence in the tactical realm, find themselves at a pivotal juncture in their careers as they ascend the leadership ladder. This transition is not merely a matter of rank, but a profound shift in roles and responsibilities. It requires adapting to a different set of competencies, embracing a broader perspective, and dealing with multifaceted challenges. This article delves into the complex journey of senior military leaders as they navigate the path from tactical proficiency to strategic leadership, exploring the challenges and the critical changes they encounter, in the roles and responsibilities that accompany this transition.

Tactical vs Strategic Leadership

Before we delve into the comparative analysis, it is essential to establish a clear understanding of tactical and strategic leadership in the military context. Tactical leadership pertains to the execution of missions at the operational and lower levels. It focuses on short-term objectives, immediate decision-making and the management of resources and personnel on the battlefield. Tactical leaders are responsible for ensuring that units effectively achieve their goals within the scope of their assigned tasks. These leaders excel at direct command and control, combat proficiency, and problem-solving within a specific operational environment. Tactical leaders respond and react intuitively and impulsively to emerging situations impacting directly a narrow bandwidth of events with limited consequences.²

Strategic leadership, on the other hand, involves making decisions that affect the military's overall direction and long-term goals. Strategic leaders are responsible for shaping policy, planning for the future, resource allocation, and international engagement. They operate at higher echelons of command, often working with inter-agency partners, political entities, and foreign counterparts. Their decisions influence not only military operations but also national security and international relations.³ Strategic leaders orchestrate the entire spectrum of multi-dimensional activities with third and fourth-order effects and consequences immediate to long-term. They create and innovate while operating in grey zone.

A strategic military leader must be well aware of the Diplomatic, Informational, Military and Economic elements (DIME) of national power. Strategic military leaders need to understand the interplay between these four elements and how they contribute to a comprehensive and coordinated approach to national security and international relations. Recognising the significance of DIME empowers military leaders to make more informed decisions and ensures that military actions align with broader national strategies. In an interconnected world, where the lines between military and non-military domains are increasingly blurred, a comprehensive understanding of DIME is essential for effective strategic leadership in the military.

Transitioning from Tactical to Strategic Leadership

In military leadership, navigating challenges in both the strategic and tactical domains requires a delicate balance. At the strategic level, leaders face the complexity of making long term decisions that shape the overall direction of military operations. Therefore, the transition to strategic leadership is a significant shift that senior military leaders must prepare for and navigate adeptly. Some of the primary challenges and considerations that they face during this transformation are discussed in the subsequent paragraphs.

Developing a Broader Perspective. One of the most significant challenges when moving from tactical to strategic leadership is developing a broader perspective. Tactical leaders are accustomed to dealing with immediate, localised concerns, while strategic leaders must consider the bigger picture. Tactical leaders need to understand not only their unit's role but also how it fits into the larger strategic context. This means grasping geopolitical dynamics, understanding national interests, and recognising the complexities of international relations.

Strategic Decision-Making Requirements. Combat decision making is inherently risk-laden, given the unpredictability of outcomes and the high stakes involved. Tactical leaders are used to making decisions that have a relatively immediate impact on the battlefield. Tactical decisions involve quick thinking, adaptability, and a profound understanding of the terrain. The critical challenge lies in the fog of war, where incomplete information and rapidly changing circumstances demand split second decisions. At this stage, the balance between aggression and prudence becomes

paramount. In contrast, strategic leaders are required to make decisions that can have long-lasting consequences and affect national security. These decisions often involve complex considerations, such as diplomacy, international law and resource allocation. The ability to think strategically and make decisions from a global perspective is a skill that senior military leaders must cultivate.

Centralised Command and Decentralised Execution. Balancing centralised command and decentralised execution at the tactical level is an important facet of decision-making process. Strategic leaders envision the overarching goals and objectives conceptually, which, necessitates the tactical leadership to make autonomous decisions at ground level. Striking the right balance in the decision-making process ensures agility in responding to dynamic situations while maintaining overall coherence in achieving strategic objectives.

Technological Shift. The integration of technology adds a layer of complexity to leadership challenges. Strategic leaders must harness technological advancements for Intelligence, Surveillance and Reconnaissance while safeguarding against cyber threats. Tactical leaders, on the other hand, operate through the integration of advanced weapons and communication systems, demanding a constant commitment to training and adaptation.

Political Acumen. As strategic leaders, military officers increasingly find themselves at the intersection of the military and political spheres. They need to develop political acumen and understand how their actions and decisions can impact domestic and international politics. The understanding of diplomatic demands in international relations is also paramount, as the alliances and coalitions add another layer of complexity, and the coordination among diverse entities demands diplomatic finesse.

Military–Civil Integration. Traditionally, military was predominantly employed for conventional and transient commitments for sub-conventional deployments. Military operated often in isolation from civil society, giving rise to a sense of respect that accompanied military leadership. The military's role was well-defined and distinct from civilian affairs. However, the modern environment of national security adopts a 'Whole of Nation Approach' which has to be embraced and adopted by military leaders themselves. This transformation marks a significant paradigm shift for the military

leaders, as they navigate through a shifting landscape in which the lines between military and civilian domains are increasingly becoming blurred.

‘Whole of Nation’ Security. The evolving role and responsibilities of the military in conventional warfare, alongside a permanent sub-conventional deployment and the routine deployment of the military for aid to civil authorities have created a complex set of expectations for contemporary military strategic leaders, who must operate in a security landscape that now demands a much broader and integrated perspective. The challenges faced by these leaders reflect the changing nature of military leadership in an era where ‘Whole of Nation’ security has become the prevailing paradigm.

Resource Management. At the tactical level, leaders are primarily concerned with managing resources on the battlefield. In a strategic leadership role, the scope of resource management expands significantly. Senior leaders must oversee budget allocation, procurement and logistics on a larger scale. This transition requires a keen understanding of resource constraints and the ability to make efficient and effective use of available assets.

Inter-Agency Collaboration. Strategic leaders often find themselves working in inter-agency environments, collaborating with various government agencies, non-governmental organisations and international partners. This necessitates strong inter-personal and diplomatic skills. Senior military leaders must be adept at building partnerships and coalitions to achieve strategic goals.

Adapting Leadership Style. Transitioning from a direct, hands-on leadership style to a more indirect and delegative one is another challenge. Tactical leaders are used to being on the front lines, making decisions on the spot, and leading by example. In a strategic role, they need to empower their subordinates and delegate decision-making authority. This shift in leadership style can be difficult for those who have excelled as hands-on tactical leaders.

Balancing Experience and Learning. Senior military leaders have accumulated extensive tactical experience over the years. While this experience is invaluable, it can also lead to resistance to change. Effective strategic leaders must strike a balance between drawing on their experience and being open to new ideas and

approaches. They must be continuous learners, staying informed about emerging trends and adapting to evolving opportunities to stay ahead of the curve.

Strategic Practitioner

In the realm of military leadership, the concept of being a 'Strategic Practitioner' may, at first glance, appear to be a contradiction. However, it is increasingly becoming a new age reality, challenging the traditional notions of strategic leadership. Some of the most renowned strategists in history, such as Sun Tzu, Clausewitz and Chanakya, were not practitioners in the conventional sense. They were academics, advisors or thinkers whose expertise transcended the battlefield. Even figures like Winston Churchill, though exceptional strategic leaders, were not practitioners in the tactical sense. This brings into focus the dichotomy between tactical proficiency and strategic acumen.

Practitioners who have spent two to three decades immersed in the tactical domain, often engaged in repetitive and automatic drills, can become so ingrained in the immediate gratification of tactical success that it becomes second nature. This can present a unique challenge while transitioning to strategic leadership late in one's career. The shift from the tactical to the strategic mindset demands a departure from the immediacy of action on the battlefield to a broader and more forward-looking perspective. It requires a shift from the hands-on, tangible results of tactical actions to the intangible, long-term impacts of strategic decisions. Navigating this transition late in life, with years of tactical experience, can be a profound challenge, highlighting the evolving nature of military leadership in the modern era.

As military leaders progress in their careers towards strategic leadership, the scope of decision-making expands significantly, necessitating a deeper understanding and integration of the 'Science of War'. The increasing volume and complexity of information available require more sophisticated tools and techniques for analysis. This is where combat decision support systems come into play, providing leaders with the necessary resources to process vast amounts of data, identify critical intelligence, and make informed decisions that contribute to mission success. The Science of War introduces a methodological approach to handling information, utilising technology and analytical tools to enhance decision-making processes.

In today's technology-fused world, including the military domain, the strategic nature of effects has gained prominence. In a flatter and fast-paced environment where information is transparent and readily accessible, contemporary military leaders have a direct view of events. The sensor-shooter gap is shrinking, requiring leaders to understand and harness cutting-edge technology and information systems. Simultaneously, there is availability of information and intelligence across the leadership, enabling more informed and timely decision-making process. This convergence of factors, in many ways, compels contemporary and future leaders to embody the qualities of a strategic practitioner.

Military hierarchies are adapting to the demands of this new era. The expectation for leaders to embrace a strategic mindset is becoming increasingly pronounced. The fusion of technology, information, and warfare necessitates leaders who can bridge the gap between the tactical and strategic levels, while maintaining a robust understanding of both. Thus, the 'Strategic Practitioner' is no longer a contradiction but rather a reflection of the evolving realities of military leadership. Today's senior military leaders must be able to seamlessly traverse the spectrum from tactical execution to strategic thinking, while leveraging the tools and information available in the modern era. This transformation underscores the adaptability and forward-thinking approach required out of military leaders in a world where the distinctions between strategist and practitioner are becoming less defined, making the role of the Strategic Practitioner a new age reality.

Creating a shared intelligence environment to facilitate Common Operating Picture is critical and real time information availability to the strategic leader from the tactical level shortens the Observe Orient Decide Act (OODA) loop in the decision-making process as well as further refines the strategies. Making the analytical decision-making process faster involves leveraging technology, decision support systems, and advanced training methodologies. These tools can help process information more efficiently, enabling leaders to make informed decisions quickly, even when the OODA loop is compressed during the heat of battle. Tactical leaders, also must rely upon strategic intelligence to undertake informed decisions on the ground. Implementation of integrated information systems and fostering a culture of information sharing enhances situational awareness at all levels.

Both strategic and tactical leaders should adopt a mindset of continual evaluation and adaptation towards a joint operational paradigm. Regular after-action reviews and assessments of the planning process within a joint operational environment provide insights into the effectiveness of strategies and tactics. Strategic leaders must ensure seamless coordination between military components of air, land and seas, as jointness is essential to achieve overall success.

Understanding the cultural dynamics of the operational environment is essential in military operations. Strategic leaders must be culturally aware to navigate diplomatic challenges and build effective alliances. However, tactical leaders must grasp the local context on the ground, ensuring that their actions align with cultural sensitivities to foster cooperation and support.

Leaders at both levels must cultivate resilience and adaptability. Strategic leaders may encounter setbacks or unexpected developments in the geopolitical landscape, requiring resilience in adjusting plans. Tactical leaders face the unpredictable nature of the battlefield, demanding adaptability in the face of evolving threats. Building mental and operational resilience is imperative and crucial for military leaders at all levels.

The integration of ethics, leadership and decision-making into every level of military training reflects a profound understanding of the challenges and responsibilities that come with military leadership. It reaffirms the commitment towards ensuring that future leaders are not only tactically and operationally proficient but also ethically steadfast and morally upright, capable of navigating the complexities of contemporary military engagements with honour and integrity.

The distinction between intuition and conscience as facets of decision-making is particularly noteworthy. Intuition, shaped by experience and observation, enables leaders to make informed judgements in complex and uncertain situations. Intuition is honed by tactical leaders through continuous exposure to diverse challenges and scenarios. This evolving intuition is a critical asset in the dynamic and often unpredictable realm of military operations. On the other hand, conscience, rooted in the moral and ethical principles instilled during the service career of a military leader, guides him in making decisions that align with the highest standards

of integrity and honour. The Science of War, encompassing the tools, techniques, and knowledge acquired through professional military education, complements intuition by enhancing situational awareness, risk management, and adaptability.

Conclusion

The transition from tactical to strategic leadership is a pivotal moment in the careers of senior military leaders. It involves significant challenges, the development of a broader perspective, and adapting to new roles and responsibilities. However, with the right preparation, education, and a commitment to continuous learning, military leaders can successfully make this transition. By embracing the changes and challenges associated with strategic leadership, they can contribute to the overall security and well-being of their nations in an increasingly complex and interconnected world. Ultimately, the effectiveness of military leadership at the strategic level is critical in achieving national security objectives and promoting global stability.

Endnotes

¹ <http://waniquotes.org/wiki/>

² *ibid*

³ AMSB Seminar 2024 conducted at Army War College

The Middle East in Flames

Major General (Dr) Atanu K Pattanaik, SM** (Retd)®

Abstract

Seventy-five years since the formation of Israel and some twenty years since 1993 Oslo Accord, it is quite clear that the two-state solution to the Israeli-Palestinian conflict is no longer viable. There is no political constituency in Israel to support meaningful Palestinian sovereignty in Gaza and the West Bank, including East Jerusalem. The refusal of many in the region to recognise the existence of Israel compounds an already complex situation. That may be the casus belli of the war in Gaza and the ensuing upheaval in the Middle East. The world recognises the humongous death and destruction being inflicted in Gaza as a response to the 07 Oct 2023 Hamas attack, but the failure of the United Nations Security Council to meaningfully intervene and conflicting interests of the many players, including the United States mean there are no easy ways out.

Introduction

The Middle East is up in flames. The Israel-Gaza war threatens to engulf the larger region with the potential to cause incalculable upheaval in global trade and commerce apart from spiking energy costs. The muddle is difficult to comprehend, even for the best of minds in the field of geopolitics. To be able to navigate the current churn and do some justice, relying partly on the author's experiences and understanding gained as the Chief Humanitarian Officer of the United Nations (UN) Interim Force in Lebanon from 2001 to 2002 is a herculean task. Nonetheless, it is a useful point of reference.

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Before sizing up the region and its current turmoil, it is necessary to understand what defines the Middle East and why. What do those in India, for example, understand by commonly referring to the region as the Middle East even though it is to the west? This is important because the commonly known characterisation of the region is not simply an ethno-geographical ensemble but a geopolitical one, defined so from an American point of view and then brought into a wider and accepted usage.

Just like 'The West', the reference to which evokes varying responses. Further back in time, the east/west divide of Europe was largely seen as 'The West' to mean west of the Adriatic Sea and 'The East' (Orient) was east of the Adriatic.¹ In the Cold War era, it denoted liberal democratic capitalist block of nations including the United States (US) and Western Europe in contrast to the communist regimes of Union of Soviet Socialist Republics and the Eastern Europe. But in today's post-Cold War era, the term as 'The US led West' denotes the Eurozone [mostly North Atlantic Treaty Organisation (NATO) members] and countries like Australia, Japan, South Korea, Singapore, and Taiwan are pitted against the Russia-China axis. Interestingly, today while 'The West' is somewhat recognisable, 'The East' is harder to define. A more divisible set of terms is the poorer 'Global 'South' in a climate change conundrum railed against the rich 'Industrial North'.

The Middle East

The Middle East generally refers to the region that stretches from Egypt to Iran and from Turkey to Yemen. With an area over twice the size of India but less than a third of the population, the 18 odd countries in this region attract far more attention than the rest of the world if seen from an energy, war and terror standpoint. As the birthplace of Judaism, Christianity and Islam centred on Jerusalem, it has a built-in theatre for war. Fights for control over the Suez Canal for trade in the late nineteenth and early twentieth centuries and for control over its rich oil and gas reserves have added to their woes. There have been long held undercurrents of disaffections and grievances, of injustice and exploitation; perpetually simmering and periodically ignited.

For a long time, the region was referred to by the US as the Near East with Far East extending to Japan. Of course, those in India would generally call it West Asia. There is a Near East South Asia Centre for Strategic Studies in Washington DC, where the author attended their apex level Senior Executives Programme in 2014. The author would go on to discuss possible conflict scenarios involving rites of passage in the Persian Gulf, little knowing that it would become a reality and play out in 2023 with the Iranian proxy, Houthis of Yemen, attacking commercial shipping through the Red Sea and throwing global supply chains off-gear once again. It had just barely recovered from the COVID pandemic.

Culling from experiences in the region the author believes that some understanding about Lebanon is helpful in order to discern the volatility in the broader region. It is premised on the fact that Lebanon, for a tiny sliver of a country with just about eight-nine mn population, has a very complex cocktail of religions; an explosive mix of Maronite Christians, Shiites, and Sunni Muslims in almost equal proportions and add to that the Druze, the Armenians and the Syrians. Palestinians numbering between 1,70,000 to 2,00,000 housed in 26 camps which are a state within a state are a crucial factor.² Since the Black September events of 1970, when the Palestinians were evicted from Jordan following their attempts to assassinate King Hussein and consequently relocate to these 26 camps, the politics of the Middle East have played out of Lebanon to a very great extent. Unlike Qatar, which is playing a larger-than-life role in negotiations with Hamas, or Saudi Arabia and Jordan who are doing a tricky balancing act in the Gaza conundrum, or Turkey and Iran which have their own cards to swing or sway the outcome, Lebanon sits right across, in the heart of the theatre.

Lebanon shares a 130 km long border with Israel along the heavily fortified Blue Line, is home to the most powerful of Iran's Axis of Resistance, the Hezbollah. It has suffered a long ruinous occupation of its southern region by Israel from 1975-1998, and fought a damaging war in 2006 which ended with no clear winners (though Hezbollah claimed victory). Today, Lebanon is in economic ruins and political atrophy, without a fully empowered government since the 2020 Beirut port explosion that killed over 200 people. The fact that when it comes to the Gaza war, the force majeure

is not the state of Lebanon but rather the non-state but far more potent and powerful Hezbollah, is a pointer to the complexities that confront the peace negotiators.

In the beginning of this millennium, it was the stunning events of 9/11 that ignited the Middle East region once again. Afghanistan is not part of the traditional Middle East. But the war on Al Qaeda moved from Afghanistan westward to Iraq in 2003 as part of President George Bush's 'Global War on Terror' citing stockpiling weapons of mass destruction by Saddam Hussein, an accusation never substantiated to date.

The unravelling of Iraq provided an opening to Iran, the Shia force majeure to make a major push into Iraq. A Shia majority country, Iraq was till then ruled by Saddam, a Sunni dictator who was vehemently against any sectarian fundamentalism.³ Iran strengthened its intelligence and operation support network through the Iranian revolutionary Guards extending it to Syria, a Sunni majority but ruled by an Alawite (a Shia variant) Bashar al-Assad, and link up with Hezbollah in Lebanon, Hamas in Gaza and Houthis in Yemen. Ranged against this Shia push, the Sunni efforts to contain Iran is spearheaded by two competing epicentres Turkey and Saudi Arabia, the former as the claimant to the legacy of the Ottoman Empire and the latter as the keeper of its holiest sites Mecca and Medina underpinned by Petro-dollars. Both are in the American orbit though.

It was only a matter of time before the Al Qaeda would mutate to a more radical and violent Islamic State of Iraq and Syria which at one time established a caliphate over vast stretches in North-Western Iraq and Eastern Syria.⁴ It would wreck devastation, inflicting violence hitherto unknown and unthinkable. The Tajik Islamic State (IS) cell that targeted US and NATO military bases in Germany in 2020, or the twin police operations targeting IS financiers and online recruiters in Spain in 2022, to recent riots in Sweden, France and Belgium as well as in parts of East Asia testify to the ability of IS terrorist organisers to plan, communicate and train in the relative safety of the group's enclaves in Syria and Iraq.⁵

Post COVID, the Middle East was in the cusp of a historic turning point. The Israel United Arab Emirates (UAE) deal and the first flight from Tel Aviv landing in Abu Dhabi on 31 Aug 2020,⁶ was a surprising ray of hope in an otherwise complex and gloomy scenario. Saudis welcomed it while Turkey and Palestinian Authorities condemned it. So did Israel's arch enemy Iran. However, this deal with UAE could have led Israel to work with more countries like Oman and Sudan for normalisation of relations and cooperation ushering in greater calm in the Middle East. But that was not to be, as the calm was shattered on 07 Oct 2023.

The Belligerents

The Hamas ignited it with a surprise lightning raid on 07 Oct, killing an estimated 1,200 Israelis and taking over 250 hostages. Israel took time to absorb the shock, plan out its response and decided to go the whole hog 'To finish Hamas in Gaza' with an unrelenting air campaign followed by a devastating ground assault.

It was a matter of time before the wider band of brothers or as Iran terms them as 'Axis of Resistance', who espouse the cause of Palestine or harbour anti-American, anti-Semitic sentiments, to join the conflagration. Hezbollah was the first to jump in, launching rocket barrages from its strongholds in South Lebanon. Four months on, it appears that Hezbollah is keen to keep its actions symbolic and restrained, fully aware of the devastation a full-scale offensive by Israel can cause, learning from its experiences of 2006. To be fair, Hezbollah is far more organised, armed and financed than 18 years ago. It is also wiser.

The Tehran-aligned militias have previously carried out waves of missile and drone attacks on Saudi and UAE oil-processing facilities,⁷ hurting Washington's security-for-oil relations with Riyadh and Abu Dhabi due to the perceived lack of a substantial US military response. That perception altered after three American service members were killed in an unmanned aerial drone attack on a base in Northeast Jordan on 28 Jan 2024. Since then the US has been conducting targeted air and drone strikes on Iran aligned militias in Syria, Iraq and Yemen. The world is terrified by the potential for this violence to escalate and spill into a wider regional conflict leading to an open and above-the-surface war between the US backed Israel and Iran.

Israel: Victim or Villain?

While there was immediate condemnation of the 07 Oct massacre of Israelis, soon the West witnessed huge, and at times, violent demonstrations on the streets and in universities, calling for an immediate ceasefire and justice for the Palestinians. Carefully choreographed images of Israeli aerial bombardment and tanks rolling in were pitched against an unarmed Palestinian civilian population bearing the brunt with their homes destroyed and hospitals overwhelmed with the dead and the injured. Hapless people were seen rummaging through concrete rubble with bare hands to pull out their dear ones, invariably babies and elderly women. Blacked out are the labyrinth of tunnels that open into schools, hospital complexes and apartment blocks, swarming with assault rifles, grenades and rockets. Hamas fighters were nowhere to be seen, as if they were ghosts.

These images evoke shock and disbelief. The ghastly and barbaric attack of 07 Oct when Hamas fighters rampaged through barely awake civilians in sleepy Kibbutz or butchered and raped hundreds of youths who were in a music festival has been pushed to the background. The victim of the 07 Oct carnage is suddenly the villain. Cries of 'From the River to the Sea... Palestine will be free'⁸ rent the air as tens of thousands march down the streets of New York, London, Berlin and Paris. The protests are well organised and generously funded. Who funds them?

The Negotiators

In the aftermath of the 07 Oct Hamas attack, many countries, leaders and the UN have been calling for a calm and immediate ceasefire. Four months down the line, most of the Gaza Strip is a wasted, mangled, bombed-out urban landscape with over 28,000 dead and more than half of its 2.3 mn population in makeshift tent shelters or in UN Relief and Works Agency schools and facilities. The need for mediation is urgent.

The US has taken the lead with shuttle diplomacy. Secretary of State Antony Blinken has been jetting across the region to negotiate with all stakeholders who have an influence. Foremost among them are Qatar, Egypt, Saudi Arabia, Turkey and Jordan.

Qatar is walking a fine line when it comes to its foreign policy, playing the 'Switzerland of the Middle East' and keeping doors open to all comers. In the past, Qatar has acted as an interlocutor between the international community and the Taliban in Afghanistan (who also have political offices in Doha), between the US and Iran, and even Russia and Ukraine. Qatari-led mediations succeeded when more than 100 captives, mostly women and children, were released during a weeklong cease-fire in Nov in exchange for the release of 240 Palestinians imprisoned by Israel. However, Qatar has been home to Hamas' political leadership since 2012, and some believe it was somehow complicit in Hamas' attacks.

Egypt brings a great deal to the table as it controls the Rafah crossing, the only official entry point into the Gaza Strip not controlled by Israel. The Egyptian military has had an enduring interest in the Gaza Strip since it initially occupied it for almost two decades after Israel's independence in 1948, and it has remained finely attuned to the area's security environment. Hamas and other Palestinian militant groups have used a network of tunnels from Gaza into Egypt to smuggle weapons into Gaza, and Palestinian fighters have passed through them to travel onward for military training in Lebanon and elsewhere.

NATO member Turkey's role as a mediator, though strengthened by its close ties with Qatar and long-standing relationships with both Israel and Hamas— is increasingly vulnerable to public opinion. The Saudi-UAE axis watches from the sidelines while making high decibel noise to satisfy the restive crowds at home. They need Israel's sophisticated security and surveillance platforms to police their own population and Israel's friendship to maintain their cordial relations with Washington to sustain their oil trade. The Abraham Accords signed in Sep 2020 is still a work in progress, though in pause right now.

Prognosis

Will Israel succeed in eliminating Hamas? That is a difficult war aim to achieve. Hamas has its presence in Lebanon, Jordan, Egypt and a host of other Islamic nations. Qatar and Turkey provide sanctuary to its political wing leaders. The US-led 'Operation Enduring Freedom' in Afghanistan lasted 20 years and left

approximately 69,000 Afghan security forces killed, along with roughly 51,000 civilians and 51,000 militants. The US lost 2,400 of its soldiers. Yet Taliban is firmly back in the saddle.

So most probably, it may morph into another frozen war with Gaza Strip turned into mini enclaves and Israel forced to prosecute a covertly targeted war personally directed against Hamas leaders, home and abroad.

The more difficult and enduring question is the future of Palestine. Almost everyone in public espouses a 'Two-State Solution', outlined in the 1993 Oslo Accord.⁹ But behind closed doors, there are many nuances to the oft-parroted solution. The Palestinian Authority that replaced the Palestinian Liberation Organisation to administer the two-parcels (West Bank-Gaza) self-ruled Palestine has lost all credibility. Its Fatah faction¹⁰ that rules the West Bank is variously accused of corruption, nepotism, a laid-back ageing leadership and above all, suspected by the hot-blooded militants, to be in cahoots with Israelis. The alternative, Hamas, that had seized Gaza in 2007, may have run out of options. Palestine as a full-fledged state never existed in the past and may never have a future. The Middle East is destined to remain in ferment.

India has a big stake in the outcome of this bruising war. It has strong defence and security ties with Israel. At the same time, it has been a traditional supporter of Palestinians and their humanitarian cause. There are around eight-nine mn Indians working or doing business in the Middle East.¹¹ It needs secure energy supplies from the region and a safe Red Sea-Suez route for its exports to Europe. India has to navigate these choppy waters with the utmost caution and statecraft.

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A Case for Developing an Indigenous Drone Maintenance Repair and Overhaul Ecosystem in India

Mr Rahul B Wankhede®

Abstract

The rapid growth of the global drone industry has created immense economic and strategic opportunities for countries worldwide. In India, the drone sector has emerged as a crucial area of focus, with the government recognising its potential to drive economic growth, enhance national security, and foster technological self-reliance. This article delves into the significance of indigenising the drone supply and Maintenance, Repair, and Overhaul (MRO) chains in India. By reducing dependence on imports, stimulating domestic manufacturing, and creating job opportunities, the indigenisation efforts aim to propel India's position as a global leader in drone technology. This article explores the benefits and challenges associated with this pursuit and discusses the strategies required to achieve self-reliance in the drone MRO industry. It concludes with the observation that by embracing a holistic approach and focusing on the long-term vision, having a robust aviation MRO ecosystem can propel India to the forefront of the global drone industry, emerging as a formidable drone hub on the world stage.

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Introduction

India's real gross domestic product at current prices is expected to grow at a rate of 8.7 per cent from 2022 to 2028, making it one of the fastest-growing economies globally.¹ The global drone market is expected to touch USD 55.8 bn in 2030, while the Indian drone market is projected to touch USD 4.2 bn, with a further high of USD 23 bn in the year 2030,² if India is able to sustain a steady growth rate. Riding on this wave of economic growth, if India aims to become the global hub of drone manufacturing and Maintenance, Repair, and Overhaul (MRO), an environment of mutual interdependence among all stakeholders needs to be created.

The word 'Drone' has been defined, as 'An aircraft that can operate autonomously or can be operated remotely without a pilot on board', in the 2021 Drone Regulations released by the Government of India.³

India is also actively adopting Unmanned Aerial Vehicle (UAV) technology across different sectors for quick decision making and problem-solving. The recent expansion of the drone business in India has also been attributed to relaxed laws on drone use and import limitations related to security. Drones have been adopted in a variety of businesses and uses, for both civil and national defence purposes, which has resulted in a major increase in job prospects for drone manufacturing, software development, and related services.

Particularly, the defence industry has expressed a strong interest in purchasing UAVs for border area surveillance and reconnaissance. India's strategic choice to buy drones from local producers is in line with its goal of developing its own drone technology. In addition, the deployment of drones in the logistics sector is gaining steam due to the growing demand for quick and affordable delivery, particularly in the e-commerce sector.

The government has loosened restrictions on drone use and provided incentives for drone makers in an effort to encourage domestic drone development and turn India into a drone superpower. The intention is to draw in foreign capital and energise the ecosystem for drone start-ups. The government has also established ambitious investment goals for the drone manufacturing

sector, with the goal of creating over 10,000 jobs and a Production-Linked Incentive (PLI) programme.⁴

Assessing the Current Drone Landscape in India

In India, drones are classified into five categories based on their weights: nano, micro, small, medium and large.⁵ It is also stipulated by law that drone operations apart from the nano and micro categories will require official permissions.

The Government of India has announced supportive measures like: allowing foreign companies to operate drones in India, creating ten thousand jobs in the drone sector by 2026, announcing an investment target of USD 6.0 bn in drone production, activating the PLI scheme for drones etc. It has sought to boost the drone industry from the supply side, through the PLI scheme and banning of drone imports, as well as from the demand side, by releasing and updating drone laws regularly.

Currently, defence drones occupy a share of around 48 per cent of the overall drone market, globally.⁶ It is expected to rise further after recent conflicts in Armenia-Azerbaijan and Ukraine-Russia. In India, the defence forces have purchased advanced drones like Heron, Predator, Reaper etc., that are used for security purposes like intelligence, reconnaissance, surveillance and target monitoring etc. These drones are directly bought off-the-shelf from their foreign manufacturers. The Defence Research and Development Organisation (DRDO) has developed its own drones and UAVs like the Ghatak, Lakshya, Black Kite, Golden Hawk etc., to reduce India's dependence on imports of drones.⁷

Apart from these, nations are also looking forward to develop counter-drone systems that can be used to curb the misuse of drones.⁸ This includes products like drone guns, drone killer nets, laser units etc., that have an emerging market of their own. On the non-defence side, various departments and ministries are using drones for land mapping, soil surveys, terrain mapping, infrastructure planning and construction, disaster management, town planning, forest and wildlife surveys, crowd control, maintaining law and order etc.

Increased demand for these products and services will create a huge backend ecosystem of ancillary industries and support units for activities of maintenance, repairs and overhaul, collectively

abbreviated as MRO. Opportunities are, thus, available in the sectors of: drone software (for information management), drone hardware (the actual product and its spares) and services (including after-sales services) sub-domains.

As of now, the segment of drone hardware is the one with maximum opportunities on the defence as well as the civil side. This situation is expected to change after 2027, wherein the services and software segments will move ahead of the hardware segment. The drone services market is segmented into three categories: Drone training and education services, Drone platform services/Drone-as-a-Service and Drone MRO.

Currently, the Indian drone market pertaining to all these sectors is at a very nascent stage.⁹ It is interesting to note that there are many 'Common Components' that go into the making of a drone, and are also used in other industries, these parts are used in daily life products as well as in drones. Some of these are:

- Electrical parts, motors, rotors, propellers.
- Sensors, audio and video recorders, cameras.
- Communication systems, antennae, micro-chips.
- Batteries, auxiliary power units.
- Various kinds of software and other small parts.

Indian policy planners need to take into account this segment as well to develop a holistic drone MRO in India. The commonality of materials and parts ensures long term sustenance of the business-financially, logistically and technologically. This will benefit the Indian drone MRO industry in two ways:

- India can ban the import of certain parts and systems that can be produced domestically.
- The experience gained from this can be used to make high quality products of global standards.

An overview of India's drone industry reveals:

- A huge dependency on imports of the main products, its systems and sub-systems. Drones have to be sent out of India even for upgrades and repairs.

- Import dependency in spare parts, MRO and other allied services.
- Dependence on foreign technologies with no technology transfer to Indian manufacturers. Almost all drones that claim to be 'Made in India' are actually assembled after putting together components imported from across the world.
- Lack of strong domestic supply chains.

Currently, the Indian drone market is being led by a few known brands like ideaForge, Garuda Aerospace etc., on the start-up side, and Bharat Electronics Limited, Hindustan Aeronautics Limited etc., on the public industries side.

The drone market in India is quite diverse in terms of opportunities, challenges, service providers and the products and services that are available. Most of the manufacturers and service providers in this domain in India are startups. It is also evident that such a big drone market cannot just depend on a few entities and needs to be supported by numerous back-end supply chains and MRO units, which have not yet fully developed in India. The manufacturing and after-sales-service in most cases is also done by the same start-up or company, with support from their local vendors. The Micro, Small and Medium Enterprises in India have not been able to fully integrate into the aviation MRO ecosystem. Also, most of the drones made in India are actually just assembled after putting together various components, systems and sub-systems, which are imported from foreign countries. Consequently, for high tech repairs, upgrades and overhauls the drones have to be sent to foreign countries and then imported back, which is a costly and time-consuming process. This needs to change to truly make India self-reliant in the drone MRO segment.

A Case for Developing an Indigenous Drone MRO Ecosystem

An 'MRO Ecosystem' refers to the presence of various suppliers, vendors, repair units, maintenance depots, recyclers, paint shops, workshops etc., which work as a part of an inter-dependent chain that maintains and services a particular product. MRO serves as the backbone support system during the entire 'Life Cycle' of a product, ensuring systematic and unhindered operations of the entire industry. A good MRO is the one that takes the minimum time to turn-around an object, received for MRO purposes, in an efficient and cost-effective manner.

In order to develop a self-reliant drone MRO market, India will have to look for avenues beyond the drone sector, to develop the overall civil and military aviation MRO ecosystem in India, of which the drone MRO is a subset.

The market-leader in any industry is always, the Original Equipment Manufacturer (OEM), since they are the ones who develop the product (including its design, data, blueprints, service and user manuals etc.) and have full knowledge of the systems as they also control the Intellectual Property (IP) rights of the product and/or the processes. But most OEMs in developed countries do not carry out in-house MRO, they instead contract it out totally to other businesses, commonly called 'Outsourcing'. Therefore, it is sensible and feasible for entities engaged in MRO operations to collaborate with the OEMs, instead of getting into a competition with them. Economies of scale and direct contact between the OEM and the MRO entities ensures profitability. In case of India's aviation market most OEMs are foreign based multi-national companies. It is well known that India does not have any robust manufacturing capabilities in the aviation sector (civil as well as defence) at the moment. Therefore, collaborations and joint ventures are the only logical way to get started.

India offers a huge market in terms of manufacturing and MRO services not just in the drone sector, but in the entire civil and military aviation industry. The government has shown willingness to create 'Ease of Business' for foreign OEMs wanting to setup shops in India. Under the new drone policy, the government announced setting up new aviation training schools and testing facilities for new products. Drones, helicopters and civil aircraft are now a priority under these rules. It is evident that in the future these machines will require trained manpower and MRO support for continued operations. But, more than 75 per cent of all MRO business from India is currently outsourced outside the country.¹⁰ This needs to change.

Indian stakeholders in the overall aviation MRO industry will need to learn the 'Know-How' as well as the 'Know-Why' of this entire ecosystem. Optimum utilisation of every available opportunity will have to be done to institutionalise the knowledge and experience acquired from dealing with the OEMs. The 2021 Policy now needs to be revised with a special focus on the drone sector.

In addition to this, state governments are also expected to come out with their own complementary policies that will help establish the drone MRO ecosystem in India.

Integration of this ecosystem with global value supply chains is nowhere near the horizon currently, as Indian entities need to start from the lower end of the spectrum that has minimal challenges in terms of Internet Protocol like avionics, mechatronics, electrical parts, frame and structure repairs etc. This will then have to be followed by moving towards the technically intensive side like developing indigenous engines. It must be remembered that this entire ecosystem has to be end-to-end, catering to all probable customers and end users in the civilian as well as the defence market. India stands to gain from an extensive domestic and worldwide market with its ambitious intentions to increase regional air connectivity for the benefit of passengers as well as goods and services, by combining the use of aeroplanes, drones, helicopters, etc. Meeting the demands from both the civil and defence sectors goals requires a strong MRO ecosystem.

Having the entire MRO activities in-house will help India in the following ways:

- At the financial level, drone users and manufacturers will have to pay less for after-sales and repair services.
- The turn-around time can also be lessened in this case if the MRO units are located within India.
- The technologies and machinery used in the MRO services will also have to be manufactured in India, which will boost allied industries.
- From a technological perspective this is important if India wishes to keep away from any issues of IP violations, and technology denials by other countries.
- Having developed control over the entire production process of drones and their logistic supply chains, India can then look forward to export these drones to foreign customers and dominate the global aviation market.

This author argues that owing to India's huge market size, domestic demand for the drones will be a bigger factor in sustaining the sector financially, rather than the exports. Another benefit that

accrues from an indigenous MRO is the control over misuse of the drone technology. The purchases, upgrades, usage patterns, locations etc., of virtually every drone can be managed via a central database combined with a regulatory system. The indigenisation of the drone supply and MRO chains in India will, thus, offer numerous advantages, including reduced reliance on imports, job creation, technological self-reliance, and enhanced national security. To accomplish self-reliance in the drone industry, India could also learn from countries like China, which mandate that OEMs producing aircraft, engines, and other crucial components must establish their supply chains, manufacturing units, and MRO establishments within the country to create a sustainable domestic ecosystem.

However, achieving full indigenisation comes with its own challenges, such as limited initial capabilities, the need for significant Research and Development (R&D) investments, access to advanced manufacturing technologies, and competition from established international players. Addressing these challenges requires a long-term commitment, collaboration between stakeholders, and a supportive policy environment.

Recommendations for Drone MRO Indigenisation

Promoting R&D. For India to create its own drone technologies, R&D spending is essential. The creation of cutting-edge airframes, propulsion systems, sensors, and software can result from cooperation between governmental organisations, academic institutions, and business stakeholders. To promote R&D efforts, financial assistance, grants, and incentives ought to be made available. To overcome global supply chain interruptions and lessen dependency on imported drone parts, R&D capabilities must be strengthened. The identification criteria for drones under R&D must be re-evaluated in order to address safety issues, even though broad exemptions on drone research are advantageous for innovation.

Education and Skill Development. The drone industry and educational institutions working together can advance skill development and research. The design, manufacture, and maintenance of drones should be covered in specialised courses offered by universities and technical institutions. Partnerships between business and academia can encourage industry innovation

and offer useful training. India should concentrate on developing a competent labour force for MRO and drone production. To guarantee a consistent supply of qualified technicians, engineers, and operators for the drone sector, vocational training programmes, certification programmes, and skill development efforts should be implemented. Partnerships between businesses and institutions of technical education can offer practical training and exposure to the real world. Industry and academic institutions can work together to design curricula and enable placements, among other things.

Government Support and Policies. The Indian government is essential in helping to domesticate and support the emerging drone sector. The DRDO has established itself as a leader in the development and production of drones among public businesses. It is essential for the government to play a market-maker role and create demand by implementing drone technology in transformative initiatives in order to support the scaling up of the industry. The key to overall success would be a joint two-pronged strategy that supports both large firms and startups. To foster a thriving indigenous drone ecosystem, the government should now provide support through funding, industry-academia partnerships, and a thriving startup ecosystem. Concrete actions on the ground, beyond conferences and exhibitions, are essential to achieve the objectives set for collaborations and professional engagements.

Public-Private Partnerships. Promising companies might benefit from programmes like the Atal Innovation Mission and Startup India, which can offer materials, mentorship, and funding. Government assistance is also required for companies in their early phases because product failures are a normal part of the innovation process. It is time to get rid of the mentality that dismisses businesses that do not deliver. To keep a competitive edge and promote innovation, manufacturing standards for software and hardware must be consistent. In order to ensure uniformity in industrial processes, the Bureau of Indian Standards can assist in drafting standards that are consistent throughout India. To safeguard against potential liabilities brought on by drone operations, more clarity regarding 'Drone Insurance' is also required. Instilling confidence in the market will require the establishment of clear regulations and the definition of optional coverages, such as breach of privacy.

Conclusion

In conclusion, India's quest for self-reliance in the drone industry holds immense promise for the nation's future. Indigenising the drone supply and MRO chains offers a plethora of advantages, including reduced reliance on imports, technological self-reliance, and bolstering national security. By stimulating domestic manufacturing and supporting startups and academia, India can develop a vibrant indigenous aviation MRO ecosystem and contribute significantly to its economic growth and technological sovereignty.

The government's role as a facilitator and the implementation of strategic policies will be critical in navigating the challenges and ensuring a sustained and timely supply of drone products and services for customer agencies. With patience, commitment, and collaboration between all stakeholders, India's defence and aerospace ecosystem has the potential to become a strategic asset, not only achieving self-reliance in national security but also complementing India's foreign policy objectives. By embracing a holistic approach and focusing on the long-term vision, India can propel itself to the forefront of the global drone MRO industry, emerging as a formidable player on the world stage.

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Dragon Trap

Spread of the Chinese Dragon

Major General VS Ranade (Retd)[®]

Abstract

The Indian sub-continent is playing a major role in the 'Pivot to Asia' and the world's next battleground i.e. the Indian Ocean. The dragon is spreading to the Indian Ocean Region (IOR) countries and our neighbours. The Chinese offer the Belt and Road Initiative to needy countries that have a singular commonality, are cash-starved and are economically not viable. The spread is Pakistan, Myanmar, Sri Lanka, Maldives, Bangladesh, Nepal, IOR regions and all six island nations in the Indian Ocean. The so-called string of pearls has grown into a 'Dragon Trap' or a 'Debt Trap'. The dragon traps with financing the infrastructure projects and infusing cash into the economy with certain dubious terms which are to be executed at a later stage, when the country defaults on debt repayments and then takes control of these projects, often with certain strategic aims behind it. Debt trap diplomacy is the buzzword. The Chinese footprint around India is a cause for concern. The Chinese have ensured their presence in strategically important countries. The Dragon is on the move and playing Wei Qi (Go). The Dragon's presence is contested by the growing Indian influence. Our foreign policy must reach out to global players and groupings like the Quadrilateral Security Dialogue, The Association of Southeast Asian

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Nations, and AUKUS (A trilateral security partnership for the Indo-Pacific region between Australia, the United Kingdom, and the United States) to play a proactive role. The dragon trap is a reality, and we must counter it diplomatically with positive engagements.

Introduction

The Indian subcontinent is the most active geopolitical battleground in the world. Rightly so, as the next major battleground is going to be the Indian Ocean. The border dispute and economic parleys make it more demanding. China for one is looking to control the region. India is one great hindrance to the dreams of Chinese supremacy. The smaller nations in and around the region base their foreign policy on the overtures of these two power horses. The last decade has seen the rise of Indian stature politically and economically worldwide. China has been engaging with our neighbours extensively since China's rollout of the Belt and Road Initiative (BRI) in 2013. Practically all our neighbours have subscribed to the Initiative. India has opposed the Initiative throughout. China has not only engaged India's neighbours but also the Indian Ocean Rim countries, island territories and the eastern seaboard of Africa. However, the Initiative promised a growth model and infrastructure development to the member countries but has failed to live up to the promises. The 'String of Pearls Theory' has probably grown into a 'Dragon Trap' around India. Geographically, the dragon spreads from Xinjiang via Karakoram through the China–Pakistan Economic Corridor (CPEC) to Gwadar, African eastern seaboard, island nations in the ocean. Myanmar, Nepal, Bangladesh and, Sri Lanka. China is the only nation with an embassy in each of the six islands in the Indian Ocean i.e. Sri Lanka, Maldives, Mauritius, Seychelles, Madagascar, and Comoros. None of the traditional players the United States (US), the United Kingdom (UK), India, or France has embassies in all six.¹

All Indian neighbours have been engaged by the Chinese economic aid and have fallen into the debt trap. The result is the presence of China in those countries. Debt repayment may not be on the minds of the Chinese, but the takeover of the infrastructure project makes it noteworthy. Our neighbours and the potential

borrowers are cash-starved, economically weak nations, look critical, and are not stable politically as well. Behind the scenes is China's reluctance to forgive debt and its extreme secrecy about how much money it has loaned and on what terms, which has kept other major lenders from stepping in to help. On top of that, is the recent discovery that borrowers have been required to put cash in hidden escrow accounts that push China to the front of the line of creditors to be paid.² India has been engaging these countries constructively and yet the Chinese footprints are visible.

The Dragon Trap

A popular Chinese game called *Wei Qi*³ or Go is an abstract strategy board game for two players, in which the aim is to surround more territory than the opponent. An ancient board game more popular than chess, which is all about strategy and gaining territory.

The dragon traps the countries by financing the infrastructure projects and infusing cash into the economy with certain dubious terms which are to be executed at a later stage when the country defaults on debt repayments and then takes control of these projects often with certain strategic aims behind it. Pakistan, Sri Lanka, Maldives, African countries, and other partners in BRI, are glaring examples of debt trap diplomacy.

The Chinese footprint around India is a cause for concern. The string has grown into a trap. The dragon has now grown many folds. The presence in these countries is what is alarming. The Chinese have effectively used the BRI to ensure their presence in strategically important countries. The Dragon is on the move and playing *Wei Qi*.

Indian Ocean

The Indian Ocean is the new strategic power pivot in the global world order. Analysing Mackinder's Heartland Theory, which professes the heartland as the 'World Island' identifies Eurasia as the pivot. The Indian Ocean and the seas along the Middle East are integral parts of the world island. The importance of the latter may be observed in the words of Saul Cohen (1963) who claims, "There are, strictly speaking, only two geostrategic regions today: The Trade-Dependent Maritime World, and The Eurasian Continental World. Projecting our views into the future, we anticipate the eventual emergence of a third geostrategic region—the Indian Ocean".

China has shown a greater interest in the ocean with its growing naval presence. China's energy needs are met through the transit routes in the ocean. To secure its needs it has engaged with all the littorals of the ocean. It has footprints in the Indian Ocean Region primarily to safeguard its interests. China is playing a new role of being a saviour to the cash-starved nations and keeping a strategic eye on the world's critical trade and energy routes. The debt trap diplomacy has played a crucial role, allowing China to operate its military bases far from its home shores. Chinese interest in recent political development in the Maldives and the berthing of a research survey ship in Male, gives ample reason for the strategists across the world to be wary of the fact that China is firmly present in the Indian Ocean.

Today, the Indian Ocean accounts for major shipping lanes and the flow of essential trade which includes oil through the three choke points. The Indian Ocean has become a major battleground due to its strategic location and economic importance.

Pakistan

Pakistan is the closest ally and leverage for China to contain India. It is relying on the historical animosity between these two countries. China has been supporting Pakistan's cause in the international fora including using its veto against India to protect known terrorists. The Chinese launched their ambitious project, the BRI, with Pakistan laying the CPEC to the Gwadar-Makran coast. This is the shortest route to the gulf and sea lanes. However, the economic revival which Pakistan was looking at did not materialise as expected. Internal resentment against the Chinese grew, as there was no employment generated, all the labour being Chinese. The debt burden was too much for Pakistan as it failed in debt repayment, thereby, giving up almost total control of the port towns. Political instability has played its role to the advantage of China. Bailout packages also did not lessen the burden. China was firmly in and knocking on India's doors much to her discomfort.

Myanmar

Myanmar has had a difficult period. In recent times, the democratic system and the Military Junta are at each other's throats, thereby fanning unrest in the country. The economy has not been doing well and it is an ideal recipe for the Chinese to step in, and they

did. Engaging Myanmar fulfils two aims, one is to keep an eye on the unstable Northeast and ensure the Chinese presence in Myanmar to control the coastline, thereby, also dominating the Bay of Bengal. Kyaukpyu Port is among the other projects in the country which are contentious and are falling into the debt trap. Yet another failed BRI promise, but Myanmar has no choice as there are no investors other than Beijing willing to invest in the country. The debt trap looms large. The present unrest plays into the hands of the Chinese as they may be aiding the Junta to counter the rebels, and yet tacitly aiding rebels too. Similar aid has been given to Indian insurgent groups notably the non-talk faction of the United Liberation Front of Assam led by Paresh Barua, National Socialist Council of Nagaland factions, and valley-based insurgent groups in Manipur. The unstable situation, poor economic environment, is an ideal place for Chinese to be in, and they are there, again much to the discomfort of India. Open and porous borders with Manipur, Mizoram and Nagaland make it ideal for the cross-border movement of non-state actors and refugees pushed out of Myanmar.

Sri Lanka

Chinese once again trapped the Sri Lankans in a debt trap of over USD 7.0 bn which they want them to pay first. In a strategic move, they have taken full control of the strategic port of Hambantota in the southern tip of the country. Beijing is also developing the Port of Colombo again in the same manner as Hambantota. This port provides a berthing place for the Chinese ships and they are right on the shipping lanes in the Indian Ocean. New Delhi missed this big time. Not only shipping, but this port provides an ideal listening post for the Chinese radars on the activities of the Indian Navy, covering both the seaboard and island territories.

Bangladesh

The two countries had blow hot blow cold relations when China vetoed the recognition of Bangladesh in 1971. However, in recent times the relations have grown warmer and have seen the major involvement of the Chinese in development projects. The BRI has sponsored various projects and the Chinese have, to their credit, completed the important Padma Bridge. In recent years, China's footprint in Bangladesh has grown significantly. In 2016, Dhaka

joined the Chinese BRI. The Awami League government reportedly prioritised 17 projects, including the construction of power plants, railway lines, roads, a river tunnel, the modernisation of ports, and the development of information and communication technologies. Bangladesh's defence ties with China have grown too.⁴ The Chinese also find their presence in the country most beneficial as they can keep a watch on India's Northeast and help in keeping it unstable and get to the north of the Bay of Bengal. The Chinese presence in Bangladesh is uncomfortably close to the strategic Doklam Plateau and the Chicken's Neck, the Siliguri Corridor.

Nepal

Nepal is geopolitically and geographically lying in a difficult location between two giants, India and China. Nepal must balance its foreign policy between these two. Traditionally, Nepal has cultural relations with India. China has been making roads near the Indo-Nepal bordering, Lapcha–Limi area, as reportedly the People's Liberation Army (PLA) has constructed buildings in the Humla district in Karnali province which is important for the pilgrimage to Mount Kailash, and along with making roads they have been diverting the course of some of the mountain rivers flowing into Nepal. Nepal has also probably fallen into the debt trap. The airport at Pokhara has gone under Chinese control over the failure of debt repayment. China is engaging India through Nepal. Beijing requires Nepalese cooperation strategically as they can then monitor Tibet and the Indian border from Pooch in Himachal Pradesh to Arunachal Pradesh.

The Fire of the Dragon

“While our western and non-western threats to security are still as prominent as before, a new threat has developed from the north and northeast. Thus, for the first time, after centuries, India's defence has to concentrate itself on two fronts simultaneously. Our defence measures have so far been based on the calculations of superiority over Pakistan. In our calculations we shall now have to reckon with communist China in the north and the northeast, a communist China which has definite ambitions and aims and which does not, in any way, seem friendly disposed towards us”.

-Sardar Vallabh Bhai Patel, letter to then PM, 7 Nov 1950

Water as Weapon. The large-scale construction of dams and river connectivity projects by China pose a serious challenge to water security, not only to the Northeast but South Asia as well. Threat due to the use of water as a strategic weapon by China is imminent. The scarcity of water in Northern China has forced it to divert water from the water surplus southern regions. This would starve India and other lower riparian countries. Beijing is using water as a weapon for future use. China remains gung-ho on its USD 62.0 bn South-North Water Transfer Project. It aims to divert 44.8 bn cubic meters of water per year from Southern China to the Yellow River basin in arid Northern China.⁵

Strategic Manoeuvre. The Western Theatre Command⁶ is the most significant development in the Chinese PLA reorganisation. It is the formation of a single Western Battle Zone, headquartered in Chengdu, and responsible for the full land border with India. With the creation of a single Theatre Command, one commander with all the resources of the PLA and People's Liberation Army Air Force as well as the conventional missiles of the Rocket Force, China has now synergised application of forces against India's northern and northeastern borders.

Checkmate the Dragon

India must observe the spread carefully and articulate its response accordingly. India's standing in the world order and standing on the flash points will counter the dragon. Indo-US relations are on the upswing amidst the business rivalry between the US and China. An Indian take on the Russian war has made it very clear that India is serious about its own security and energy requirements and can make its own choices according to national interests. The successful conduct of G-20 has made China, wary of the things to come. Bringing the Indian contentious geographical issues to the world forum was by no means an easy task which New Delhi did admirably. The inclusion of the African Union into the folds of G-20 with consensus was a masterstroke. India is being hailed as a power to reckon with, much to the discomfort of the Chinese. The rise of the leader of the Global South is a major hindrance for the dragon spread. The revival of the Quadrilateral Security Dialogue (QUAD) has checkmated the Chinese dreams. The Pacific Island nations have already asked the US to resume funding or else China will move in with adequate funds. It is yet another

strategic move by Beijing to provide funds to cash-starved nations to assume control. Leaders of three Pacific island nations have warned the US that any delay in providing funding would lead to Beijing increasing its stronghold in the region. China is seeking to draw away as many of Taiwan's diplomatic allies as possible in the region.⁷

The diplomatic engagements with the Indian Ocean littoral countries must be higher on the agenda. Simultaneously, India must develop naval capacities and island territories. Economically, India is on the rise, and has a proactive industrial base ready to compete with the world standards and leaders. Neighbours' First Policy must be made effective as Beijing has firmed its presence in the neighbourhood.

Militarily, India has the fourth largest standing defence forces, modernised and capable. This was admirably demonstrated during Doklam and Galwan imbroglios. India has restructured its forces to face the new threat from China and has, in recent times, shown resilience and national character and has spelt out the national interests. COVID-19 and debt trap diplomacy have dented the Chinese standing. BRI has not given the results the recipient countries were expecting, but the Chinese never intended well either. The presence and control of the areas far away from home was the strategy of the game, *Wei Qi* and they have achieved it.

Conclusion

The dragon is making its presence felt in the region and is contested by the growing Indian influence. India's foreign policy and external engagements coupled with political strength will have to play the part to nullify the dragon's bite. India's foreign policy must reach out to global players and groupings like QUAD, Association of South East Asian Nations, and the trilateral security partnership for the Indo-Pacific region between Australia, the UK, and the US to play a proactive role. The Dragon Trap is a reality, and we must counter it diplomatically with positive engagements.

Endnotes

¹ Darshana M. Baruah, Surrounding the Ocean: PRC Influence in the Indian Ocean, <https://carnegieendowment.org/2023/04/18/surrounding-ocean-prc-influence-in-indian-ocean-pub-89608>.

² Bernard Condon, China's loans pushing world's poorest countries to the brink of collapse, Associated Press, May 19, 2023.

³ *Wei Qi* (Mandarin for 'board game of surrounding') had its origins in China sometime before 500 BC. *Wei Qi*, probably better known as 'Go!' is a game which occupies a place in Chinese history and culture. The basic aim of the game is to capture as large a territory as possible on the board.

⁴ Mubashar Hasan, What is Driving China-Bangladesh Bonhomie? , Diplomat, October 18, 2023.

⁵ <https://www.indiatoday.in/world/neighbours/story/china-diverting-tibet-water-northwards-94834-2012-03-01>

⁶ The Western Theater Command is one of the five theatre commands of the People's Liberation Army of China since 2016. Its jurisdiction includes Sichuan, Tibet, Gansu, Ningxia, Qinghai, Xinjiang and Chongqing.

⁷ Ramananda Sengupta, <https://stratnewsglobal.com/articles/clear-funds-else-china-waiting-pacific-island-nations-warn-us/>, February 16, 2024

China's Shaping of Global Information Environment and Winning Without Fighting

Colonel (Dr) DCS Mayal (Retd)[®]

Abstract

With the revolution in the field of communication technologies, the relevance of public diplomacy has exponentially increased due to the introduction of infinite, invisible, and empowered stakeholders willing to operate from a place and time of their choosing. The growing relevance of public opinion has resulted in the prominence of soft power over hard power. The availability of surplus capital and the largest human resources (citizens and influential diasporas) coupled with capacity and capability development by China to meet the global demand for cheap surveillance applications and communication gadgets has considerably facilitated China innocuously establishing its footprints through information diplomacy. With phenomenal investment in the establishment of its footprints at critical chokepoints of the world, particularly through the Belt and Road Initiative and technology theft from developed countries, China has not only emerged as a leader in future technology in a short timeframe, but has also placed itself in an unassailable position to monitor, scan, control, investigate, and govern global trade, traffic and communication without drawing global attention. The Chinese dominance in the information domain has considerably augmented its potential to reshape the global information environment for promoting its propaganda, disinformation, and censorship and win future wars without even fighting.

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Introduction

The evolution in information technologies has reshaped the landscape of future battlefields, emphasising the prominence of soft power over hard power. John Arquilla, while explaining the growing relevance of soft power said “In today’s global information age, victory may sometimes depend not on whose army wins, but on whose story wins”. With the introduction of infinite invisible, empowered and participative stakeholders in today’s networked world, public opinion has emerged as a prominent consideration for all future conflicts. Consequently, shaping of information domain to influence public opinion has emerged as a paramount aspect in the strategy for future conflicts.

To overcome its loss of *mianzi* (face) from a ‘Century of Humiliation’ and restore its lost stature amongst the global community, the Chinese despite possessing the largest conventional armed forces have strictly adhered to Sun Tzu’s aphorism, “The supreme art of war is to subdue the enemy without fighting”. With the availability of deep pockets and surplus capital, the Chinese have subtly integrated emerging technologies with its largest human resources, both within the country and abroad to favourably shape its global image. Beijing has evolved to become the world’s first ‘Digital Authoritarian State’. Its creativity and ability to combine all the elements of ‘Societal Power’ including espionage, information control, industrial policy, political and economic coercion, foreign policy, the threat of military force, and technological strength challenge the world’s rules-based international order.¹ With the fast changing face of the fourth estate due to the introduction of new stakeholders, the Chinese have inextricably infiltrated the global economy, infrastructure, health care, communication, and technological value chain to reshape the global information environment for promoting its propaganda, disinformation, and censorship. The success of the Chinese information warfare can be measured from the private saying of the Asian Foreign Minister that “The US has been fighting but not winning in the Middle East for 20 years, while China has been winning but not fighting for 20 years”.²

China, even with the availability of the largest human assets, population and influential diaspora, has generally been reticent towards information diplomacy till the end of the 20th Century. The

experience of the Tiananmen Square demonstrations (1989), and Severe Acute Respiratory Syndrome (2003), played a crucial role in the transformation of the Chinese approach from inward to outward. With the realisation of information domain relevance, the Chinese from the beginning of the 21st Century extensively started using it, particularly after the 2008 Beijing Olympic Games for their image management.

Chinese Informational Diplomacy

China's informational diplomacy is a broad-based communication activity to increase awareness and sympathy for China's policies, priorities, and values among the global population. After the ascension of Xi Jinping, as President in 2013, Beijing's expenditure on information diplomacy increased exponentially to tell their version of the story to the world and even erased the anti-China script for reshaping an existing international narrative that views China's emergence as hostile. China's informational diplomacy aims to solicit support for its policy positions on Tibet, Uyghurs, Taiwan, Dalai Lama, Hong Kong, Macao, Falun Gong, and Belt and Road Initiative (BRI) and minimise the negative reporting on allegations of human rights, corruption, opacity, and debt-trap diplomacy. Chinese tactics include expansion of state-owned media, direct purchase of foreign media outlets, publication of Chinese-made content in foreign media, enhancing Chinese elites/diplomatic media interactions, media partnership network, sponsorship of online influencers, and misrepresenting official commentary.³ The People's Republic of China's (PRC) approach features: leveraging propaganda, misinformation and censorship, promoting digital authoritarianism, exploiting international organisations and bilateral partnerships, pairing co-optation and pressure, and exercising control of Chinese-language media. Together, these mutually reinforcing elements enable Beijing to exert control over the narratives in the global information space by advancing false or biased pro-PRC content and suppressing critical voices.⁴

Initially, China directed its effort to subtly magnetise foreign audiences and the Chinese diaspora towards their values, beliefs, and positions and thereafter focused towards ensuring adoption, co-option, and even collaborations at multi-dimensional levels to influence and control their perceptions, preferences, and actions. Besides attraction and persuasion, China has even resorted to

manipulative, deceptive, dissuasive, compulsive and coercive tools of information diplomacy to compel global audiences to follow their preferred narrative in letter and spirit. The PRC commands a massive state media ecosystem which includes official messaging, diplomatic communications, messaging guidance to state-owned enterprises, and less overt proxies such as new media 'Influencers'. The Chinese Communist Party's (CCP) Central Propaganda Department (CPD) and United Front Work Department (UFWD) oversee much of this messaging under the guidance of leading small groups. UFWD is responsible for propaganda, targeting Chinese diaspora communities, and coordinating and overseeing strategic acquisition and investment in overseas media. The China Media Group, which consists of PRC state media enterprises China Central Television, China National Radio, China Radio International, and China Global Television Network, is under the supervision of the CPD.⁵ State Council Information Office is the 'Nerve Centre' of China's information diplomacy apparatus and plays a watchdog role in overseeing and monitoring media in China and abroad including internet censorship.

Chinese Informational Diplomacy and BRI

The BRI, announced in 2013, by President Xi Jinping, has emerged as a spinal cord for Chinese information diplomacy particularly against underdeveloped and developing countries. The integration of the Digital Silk Route (DSR) and the Space Information Corridor (SIC) with BRI has placed China in an unassailable position to scan, monitor, govern, investigate, and even disrupt/manipulate communication globally in general and the BRI countries in particular. Nadege Rolland said, "It is important to pay attention to the intangible components of the DSR, such as Beijing promoting its version of internet governance norms. The cyber espionage of China has phenomenally increased particularly in countries that are linked to BRI. Chinese cyber espionage linked to the BRI is increasing and Beijing is using the huge infrastructure project to spy on companies and countries as well as to damp down dissent. China is alleged to have targeted Belarus, Maldives, Cambodia, European foreign ministries, and non-governmental organisations".⁶

The availability and global demand for cheap surveillance apps and communication gadgets have further facilitated China in attaining an enviable position to manipulate global information

space and enforce digital authoritarianism. The promotion of the latest cheap domestic surveillance technology and censorship has also ensured the voluntary acceptance of these technologies as a new normal amongst the global community. As of 2019, PRC information controls had diffused to 102 countries, helping legitimise the PRC's domestic governance practices and lock in the CCP's control over information.⁷ Beijing's initiatives in cyberspace governance largely focus on influencing standard-setting bodies to ensure international technical norms are favourable to Beijing's preferences. PRC messaging uses the term 'Community of common destiny in cyberspace', which is intended to elevate Beijing's desired policies in the development of future international cyber norms to legitimise repressive practices.⁸ The use of Chinese BeiDou (Navigation Satellite System) for military and civil purposes by Pakistan (2020) and, the installation of the world's highest terrestrial 5G base station on Mt Everest by Huawei to allow internet access to mountaineers and researchers are some of the innocuous Chinese informational activities in the South Asian region which has phenomenally leveraged its capability to snoop in the region including India.

Platforms for Propagating Chinese Informational Diplomacy

China has extensively leveraged international organisations for information diplomacy either by placing its citizens or its proxies in the top post for achieving its 'Middle Kingdom Dream'. Beijing's efforts to use the information space in multilateral organisations in support of its policy objectives include retroactively altering the historical documents of international organisations and a failed attempt to rewrite data entry procedures for global logistics. Working through multilateral organisations, the PRC seeks to restructure digital governance in ways conducive to censorship and surveillance. Simultaneously, Beijing promotes norms in United Nations (UN) governing documents that reinforce its signature foreign policy initiatives, domestic practices, and CCP ideology. Beijing pushes back in multilateral fora against narratives that run counter to its foreign policy objectives. PRC's efforts to limit Taiwan's role in international organisations are a prime example. The PRC sought to prohibit the UN High Commissioner for Human Rights from releasing a report in Aug 2022, documenting its abuses in Xinjiang. The PRC nationals at the UN have sought to conflate the BRI and the Global Development Initiative with larger

multilateral objectives such as the UN's Sustainable Development Goals.⁹

China has extensively utilised ubiquitous social media platforms for global dissemination. Beijing uses manipulative social media tactics such as bots and trolls to increase pro-PRC content and muzzle anti-Chinese voices. It also technically increases the degree of difficulty for online users by manipulating search engine results and hashtag searches through flooding.

China through its embassies employs a carrot-and-stick policy to pressure foreign media, eminent contributors and academic institutions to follow its preferred narratives and refrain from providing platforms to anti-Chinese voices. In democratic countries, Chinese individuals and organisations have filed defamation suits or taken legal action against academics and journalists, or threatened to, in Canada, Australia, Czechia, and Taiwan.¹⁰ China has also been engaging prominent personalities of the information domain for global dissemination through financial favours, granting recognition/important appointments and qualifications from recognised Chinese universities. The prominent personalities of the information domain include elites of political parties, mass leaders, businessmen, academicians and famous media personalities. China also engages foreigners through exchange programmes of political parties, academicians and sister city arrangements.

A special focus of CCP is directed towards cultivating a global media community, to shape the international environment favourably. To dissuade the media community from adverse reporting, China undertakes numerous measures ranging from warnings, legal threats, denial of visas, refusal to renew visas, deportation, arrest and transnational repression. According to a survey published in 2019, Over the previous decade, 9 per cent reported having been warned or interviewed by PRC authorities about their research, 26 per cent reported being denied access to archival research, and 5 per cent reported problems obtaining visas. The PRC has intimidated and expelled international reporters to target specific outlets and even arrested foreign journalists working for PRC media. For those journalists still able to access the PRC, Beijing may grant them shortened residence permits and refuse to renew their press cards, giving them only provisional reporting rights.¹¹

Within China, reporters who supply unfavourable content to foreign media sources also face harassment, detention, or even imprisonment. Since 2016, the Chinese foreign ministry has hosted several journalists from leading news networks including The Indian Express, Jansatta, and the Indo-Asian News Service of India.¹² Under the garb of legitimate journalism activities Chinese are using journalists for intelligence-gathering purposes abroad. On 19 Sep 2020, Delhi Police arrested a veteran freelance Indian journalist Rajeev Sharma, for passing sensitive information about India's border strategy to China. In 2020, two episodes, in New Delhi and Brussels, highlight, how Chinese intelligence services are increasingly using the country's state-controlled media and personnel for espionage and influence operations.¹³

China has purchased or acquired stakes or secured content-sharing agreements with reputed international newspapers for global dissemination of its preferred narrative and to suppress anti-Chinese content. Beijing has purchased the top newspaper which also includes Alibaba buying South China Morning Post, Hong Kong's top English language newspaper in 2015. China also gives heavy payments to the top newspapers of the world. CCP-controlled 'China Daily' has paid more than USD 4.6 mn to 'The Washington Post' and nearly USD 6 mn to 'The Wall Street Journal' since Nov 2016. China has also paid USD 240,000 to Foreign Policy, USD 50,000 to the 'New York Times', USD 34,600 to 'The Des Moines Register' and USD 76,000 to 'CQ-Roll Call' in the past four years.¹⁴ It has also made huge investments in the top three news aggregators/applications in India, which include ByteDance, Dailyhunt, and NewsDog.¹⁵ China produces linguistic articles in local media attributed to authors not related to the CCP under false names to hide its role, falsely represent the actual sentiments of locals and promote pro-China narratives.

The PRC controls the information consumed by global Chinese readers. Beijing shapes overseas Chinese-language content to amplify its preferred narratives while limiting the reach of critical voices. Beijing furnishes low-cost or free content, leverages international fora, and exploits WeChat, an application used by many Chinese-speaking communities outside the PRC. Collectively, these mechanisms create a global Chinese-language ecosystem in which Beijing's messaging resonates and disinformation gains traction.¹⁶

China has used aggressive measures abroad to tighten its control over its diasporas. It undertakes transnational repression through Operation Fox Hunt or by using international organisations like Interpol or through Chinese overseas organisations like Overseas Police Station and Overseas Chinese Assistance Centres, to intimidate or ensure repatriation of dissidents by accusing targeted individuals as economic fugitives requiring repatriation to face charges of corruption.

The latest development in the field of Big Data and Artificial Intelligence (AI) technology has further enabled China to exploit the information domain. China is collecting colossal data through a surveillance blanket spread under the garb of BRI. China is extensively using its tech giants like Huawei, Zhongxing Telecommunication Equipment Company Limited, Alibaba and Tencent for intelligence collection, interference, and influence operations through the digital domain to control debate, ideas and clamp down on dissent. A Shenzhen-based technology company with links to the CCP is reportedly monitoring over 10,000 Indian individuals and organisations in its global database of 'Foreign Targets'. The Indian Express, using big-data tools, investigated the metadata from Zhenhua's operations to extract Indian entities from the massive dump of log files that constituted what the company called the Overseas Key Information Database.¹⁷ In Apr 2021, the US blacklisted seven Chinese supercomputing entities citing national security concerns.

The Chinese *qingbao* (information) approach of intelligence collection from the open domain using sophisticated techniques of library science has considerably augmented Chinese influence operations. Christopher Krebs while describing Chinese informational diplomacy said, "When we think about Russia, they are trying to disrupt the system, and China is trying to manipulate the system, so that requires us to take different approaches". With a colossal attractive database and new digitalisation technologies, China is not only manipulating the database by rewriting history but also directing the global audience towards its edited data. Research establishes that leading academic journal databases in China are practising deliberate censorship aimed at rewriting history to suit the current party line. In the past, censors altered history by striking offensive passages, tearing out pages, and seizing or destroying entire texts, all crude methods by today's standards.

Now, they can tinker endlessly with the digital record to achieve their goals without ever leaving their desks, making one non-destructive edit after another, each propagating nearly instantaneously around the globe, leaving behind no discernible trace or loose ends. The same technologies that filter our newsfeeds can be used to tamper with scholarship and memory. In short, Chinese censors are capitalising on the conversion of our libraries from redundant, fault-tolerant repositories of tangible objects into passive links in a centralised distribution chain dominated by a small number of online providers.¹⁸ In 2017, Cambridge University Press and Springer Nature admitted to withholding content at the request of Chinese censors from subscribers visiting their online sites from China. As per the Twitter report of Jun 13, 2020, China was using 1,70,000 accounts for manipulative activities and on CCP's request Apple was accused of censoring the Quran app in Oct 2021. During the Doklam stand-off, the Chinese-owned Universal Control Browser was found filtering certain news on Android handsets in India to shape perceptions and outcomes. YouTube was also automatically deleting comments containing certain Chinese-language phrases related to criticism of the CCP during the Doklam stand-off.

Several Chinese citizens are involved in stealing data and cyber fraud through cheap and popular applications. A major concern amongst security agencies is that the critical personal data stored in Chinese servers is not retrievable. Enforcement Directorate filing a complaint in Hyderabad (Dec 2021), Bureau of Immigration issuing a lookout circular against three Chinese nationals for defrauding (Jul 2022), arrest of Junwei Han from West Bengal (May 2022) for taking 1300 Indian SIM Cards, arrest of Wan Chenghua (Sep 2022) from Chandigarh are some of the reported incidents where Chinese nationals were found directly involved in cyber fraud or intelligence collection in India.

China is undertaking extensive investment in global satellite networks for controlling global information dissemination. The integration of BRI with DSR and the SIC will considerably facilitate China in tapping the mammoth streams of big data, which can directly support the next-generation AI technologies. The ready availability of Big Data and the capability to process the collected data will provide China with a clear military and intelligence edge

over its competitors. Extensive use of the BeiDou by China and other BRI countries will remove the PLA's vulnerability to the US-controlled Global Positioning System and further expand Chinese influence, commercial interests, and standards.

China is extensively using its economic might to gain the support of foreign audiences through Multi-National Corporations (MNC). To align with their geopolitical aim and adopt desired behaviour, China exerts pressure on international companies through public attacks via social media. Considerable pressure on international companies has been witnessed to represent Taiwan, Hong Kong, Tibet, and Macao as part of China on maps, company websites, etc. Beijing is making specimens of companies not aligning with their preferred narratives and even pressing for public apologies, which can be heard globally.¹⁹ In 2018, the PRC Civil Aviation Administration sent letters to major airlines ordering them to remove from their websites, references to Taiwan, Macau, and Hong Kong as separate countries from the PRC, under penalty of referral to PRC cyberspace authorities. 18 of 44 airlines complied and changed their descriptions of Taiwan within the 30-day time limit. MNCs are even coerced to join Chinese initiatives and activities such as the BRI or the China International Import Exhibition. The footprints of Chinese information activities were witnessed even in the domain of sports. A single tweet by Houston Rockets General Manager Daryl Morey in support of pro-democracy Hong Kong protesters witnessed massive Chinese retaliation and had put the team and the National Basketball Association on notice. Even companies operating beyond China's territorial boundary are not spared. The South Korean supermarket chain Lotte was sanctioned in 2020 after Seoul installed US anti-missile systems on company property.

Another unchecked area of the growing Chinese information activities is the Corporate Social Responsibility (CSR) initiatives. The ambiguities in the use of CSR funds by Chinese companies have led to deep concerns in the Indian civil society and strategic communities. It is believed that Xiaomi spends its CSR funds on creating a pro-Chinese atmosphere in India, especially in tech cities.²⁰

As part of the cartographic war in the information domain, China is renaming disputed locations in Asia to bolster its territorial claims and build evidence to support those claims in case of any sovereignty disagreements in the International Court. Beijing has used new names and other map coding to back its claims in the South and East China Sea, and the area along the Indo-China border, including the world's highest peak, Mt Everest.

The activities of the Chinese information domain also entail creating volatile situations abroad to discourage companies from shifting their base away from China. Apple wanted to establish iPhone manufacturing in Kolar, Karnataka. A huge labour protest over a trivial issue of idly was created by bribing local goons to discourage Apple and other MNCs from shifting their bases from China. Similarly, India's biggest copper manufacturing factory, Sterlite Copper, was stopped and benefitted China. All these activities are carried out by China through money laundering. China is the world's biggest money laundering nation. As per conservative estimates, in the last 10 years (2010-2020) USD 1.0 tn has been laundered from China to various countries.²¹

In China, the regulation of films and media was handed over to the Propaganda Department of the CCP in 2018. The US films have made over USD 2.6 bn in China in 2019. With the largest market, China has been successful in ensuring its dictate in Hollywood. To earn maximum profit, through the lucrative Chinese market, Hollywood is consistently following the unwritten dictate and refraining from antagonising the Chinese. Hollywood's access to the Chinese market comes with conditions and stipulations from the long arm of Chinese censorship wherein studios and filmmakers continue to change 'Cast, plot, dialogue and settings' in an 'Effort to avoid antagonising Chinese officials in films'.²² As per a report published on 20 Aug 2019, "The nine films that show how China influences Hollywood are Top Gun: Maverick (2020), Dr Strange (2016), Captain America: Civil War (2016), (2013), Pixels (2015), World War Z (2013), Skyfall (2012), Looper (2012), Iron Man 3, and Red Dawn (2012).²³ In India, some of the incidents, wherein Chinese involvement in Bollywood was observed are the blurring of the 'Free Tibet' flag in the movie Rockstar and the surprising success of unheard films like 'Secret Superstar' in China. With the stupendous Bollywood success in China, any overdependence on the Chinese market may invite conditions and stipulations from the CCP.

Legal Cover to Chinese Informational Diplomacy

Post ascension of Xi Jinping as President, China has passed several laws and regulations to build a comprehensive national security system, as outlined in 2014, to defend China from perceived threats and strengthen the legal basis for China's security activities. These laws and regulations are aimed at ensuring the cooperation of Chinese citizens, diasporas, foreign citizens, enterprises, and organisations. The extra-territorial application of new Chinese domestic laws has significantly expanded the range and scope of Chinese intelligence agencies. With global access to government-supported companies like Huawei, Xiaomi, etc, the human and technical reach of Chinese companies now gives the intelligence services opportunities to gain direct access to many governments and societies of the world.

Conclusion

With deep pockets for exploiting emerging technologies and the largest available human resources within the country and abroad, China appears to have achieved proficiency in integrating technology with public opinion to exploit the informational domain. The platform provided by BRI for the expansion of Chinese informational capabilities and capacities coupled with the extension of Chinese law beyond its territorial boundaries has further strengthened Chinese footprints globally to propagate its preferred narrative and suppress anti-Chinese activities.

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Tiny Artificial Intelligence: Atmanirbhar Approach to National Security

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Abstract

In the face of escalating natural and man-made disasters, the breakdown of critical communication and navigation infrastructures poses immense challenges for rescue operations. This article proposes an innovative approach to address these challenges by harnessing drone technology, visual odometry, and image stitching to create high-resolution, real-time maps of disaster-stricken areas. The algorithm incorporates artificial gridlines for precise navigation in non-Global Positioning System environments. The method, demonstrated through a comprehensive Python code, offers timely and accurate spatial insights crucial for efficient disaster recovery operations. By overcoming the limitations of traditional satellite-based mapping, this approach provides a cost-effective, agile, and deployable solutions. The article discusses the algorithm's robustness, hardware considerations, and practical applications, emphasising its potential to revolutionise disaster response strategies and contribute to resilient disaster recovery efforts.

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Introduction

In a world rife with both natural and man-made disasters, the grim reality of simultaneous breakdowns in critical lifelines becomes apparent. Picture a scenario where the pillars of modern communication and navigation internet and Global Positioning System (GPS) crumble, throwing society into chaos. Rescue teams grapple with communication breakdowns, isolation, and a dearth of real-time information, hindering effective response. Navigating disaster zones becomes perilous without GPS guidance, compounded by complex topography and obstacles. Resource management falters due to limited supplies and inefficient distribution, risking lives in underserved areas. Safety concerns loom large as situational awareness diminishes, and specialised training for autonomous systems becomes imperative. The psychological toll is profound, with rescue teams battling isolation, uncertainty, and heightened stress. Roads lie in ruins, disrupting vital networks, and telecommunication failures exacerbate the crisis. In this non-GPS environment, the remedy lies in the creation of cutting-edge maps with artificial grids for navigation- a beacon of hope in a landscape marred by uncertainty.¹

Understanding Disaster Environment

In the aftermath of such disasters, orchestrating rescue efforts involves collaborative efforts from diverse teams. The challenges arising from this amalgamation underscore the need for comprehensive 'Situation Awareness' as a pivotal prelude to deploying these teams. The command-and-control centre faces the crucial task of understanding the dynamic and chaotic situation on the ground before activating rescue teams. Achieving real-time Situation Awareness becomes paramount, laying the foundation for subsequent operations.²

The integration of non-native rescue teams introduces complexity, requiring synchronisation of disparate capabilities, procedures, and communication protocols. Recognising the axiom that 'One picture is more than a thousand words', the urgent need for a current and accurate map becomes evident. Time is critical in disaster scenarios, and the absence of immediate spatial insights hampers decision-making. A recent map, though procedurally



Figure 1: Illustration of the Components of a Catastrophic Scenario

intricate to obtain, emerges as a transformative asset for the command-and-control centre.³

Considering the above, the problem statement boils down to ‘Stitch multiple map images of the disaster struck areas, clicked by drones, and lay down Artificial Intelligence (AI) Grid to enhance navigation in non-GPS environment’. The phase for the project is follows:

- Stitch multiple map images of the disaster struck areas, clicked by drones.
- To lay an AI grid to enhance navigation facility.⁴

Technology Gap

The technology gap in disaster mapping arises primarily from the limitations of traditional satellite-based approaches. Traditional satellite mapping relies on satellites orbiting the Earth, and these systems face inherent challenges that hinder their effectiveness in the context of disaster response.⁵

One significant drawback is the predetermined nature of satellite orbits. Satellites follow fixed paths, and their revisit times to specific locations are not immediate. This lack of immediacy in revisiting disaster-stricken areas can result in outdated maps that do not accurately represent the current conditions during a crisis. The static nature of satellite orbits becomes a bottleneck in capturing real-time changes, a critical factor for effective disaster response. Another critical limitation is the susceptibility of satellite mapping to adverse weather conditions. Unfavourable weather, such as storms or cloud cover, can obstruct satellite data acquisition. This susceptibility introduces gaps in spatial information, hindering the creation of comprehensive and up-to-date disaster maps. In a scenario where timely and accurate information is crucial, reliance on satellite mapping's weather-dependent nature becomes a significant impediment.⁶

The bureaucratic procedures associated with satellite technology also contribute to the technology gap. Obtaining regulatory approvals, national security clearances, and conducting environmental impact assessments are time-consuming processes that delay the deployment of satellite-based mapping solutions. Privacy and security concerns add another layer of complexity, necessitating meticulous adherence to regulations, customs procedures, and import/export rules. The centralised nature of satellite data distribution and archiving further complicates the swift acquisition of real-time data during crises.⁷

Contrastingly, emerging technologies like drone image stitching present a transformative solution to bridge this technology gap. Drones offer a more agile and adaptable approach to disaster mapping. They can be rapidly deployed to capture real-time information, providing immediate decision-making support to rescue teams. Drones overcome the revisit time limitations of satellites, enabling quick and targeted mapping of disaster areas. Their flexibility and ability to operate in diverse weather conditions ensure that mapping efforts are not hindered by atmospheric challenges.⁸

The adaptability of drone mapping technology allows for on-demand mapping tailored to the specific needs of disaster areas. Drones can capture high-resolution imagery, surpassing the limitations of satellite maps, and offer a detailed and accurate representation of the disaster scene. The immediate availability of these detailed latest maps facilitates efficient resource allocation, enhances situational awareness, and significantly improves the overall effectiveness of emergency responses.⁹

Methodology

The real-time, high-resolution geospatial images acquired by drones are seamlessly stitched together using advanced computer vision algorithms. This process yields detailed and comprehensive maps of the affected regions. The significance lies in the immediate and accurate spatial insights gained, facilitating resilient planning for disaster recovery operations. By providing up-to-date and procedurally intricate maps, this approach becomes a transformative asset for command-and-control centres, ultimately contributing to more successful disaster recovery operations.¹⁰

The creation of artificial longitudes and latitudes using AI emerges as a crucial component with numerous benefits. In the absence of traditional GPS-based coordinates, the proposed artificial gridlines overlaid on stitched maps offer a systematic and locally recognised reference system. Each intersection on the grid represents a unique point on earth, allowing for precise navigation and pinpoint location determination. The customisation of artificial gridlines for specific disaster areas enhances navigation accuracy, adapting to local terrain and providing targeted assistance. The flexibility of the artificial grid not only facilitates navigation but also serves as a means of communication for localisation. The use of AI in creating these gridlines contributes to enhanced situational awareness for rescue teams, offering a practical solution for precise navigation in challenging and dynamic environments during disaster recovery missions.¹¹

Challenges in methodology

Addressing diverse challenges in image stitching and grid generation is crucial for achieving seamless and accurate outcomes. Firstly, variations in image sizes and resolutions pose

a significant hurdle. To overcome this, employing image resizing and normalisation techniques, content-aware resizing for preserving details, and applying padding or cropping for standardisation are recommended solutions. Additionally, managing differences in image orientation, zoom levels, exposure, warping, and time-varying scenes require robust algorithms. Techniques such as feature matching, geometric transformations, multi-scale feature detection, and high dynamic range imaging should be implemented for optimal results.¹²

Another considerable challenge lies in handling various image formats commonly encountered in aerial imaging, necessitating support for multiple formats and the use of image conversion libraries. Optimising processing time involves efficient algorithms, parallel computing, and caching mechanisms to reduce computation duration. Fine-tuning cropping parameters and ensuring the quality of input images are pivotal for maintaining feature details during stitching. Moreover, aligning artificial gridlines accurately demands advanced feature recognition and the utilisation of control points for precise alignment.¹³

The adaptability of the grid system to map variations, integration without obstructing important details, and user-defined grid parameters can be achieved through dynamic algorithms and user-friendly interfaces. Grid visibility, readability, and persistence during user interactions require careful consideration, including the use of contrasting colours, dynamic adjustments, and efficient memory management techniques. In addressing challenges specific to non-GPS environments, implementing visual odometry for accurate navigation and sensor fusion for improved accuracy were vital. Furthermore, ensuring consistency across different maps, preventing interference between gridlines and map features, and adapting to non-planar surfaces involve standardised grid systems, customisation options, and adaptive structures. Automated grid generation based on map is achieved through computer vision algorithms and machine learning models. Lastly, providing real-time updates for dynamic maps involves implementing real-time grid rendering and event-driven updates triggered by changes or user interactions.¹⁴

Results

An algorithm was developed in language Python using portions of various pre-existing python libraries. Relevant portions like classes, functions, and methods were picked up to create a tailored programme. Total of 83 drone clicked images of an area of interest was acquired from various data banks. Images were of different shapes and sizes having some overlap with adjacent area. The images were given as input to the code and the result Figure 2 below came as an output. Subsequently Figure 2 was given as a new input to another set of codes for generation of tailor-made longitudes and latitudes and resultant Figure 3 was achieved.¹⁵

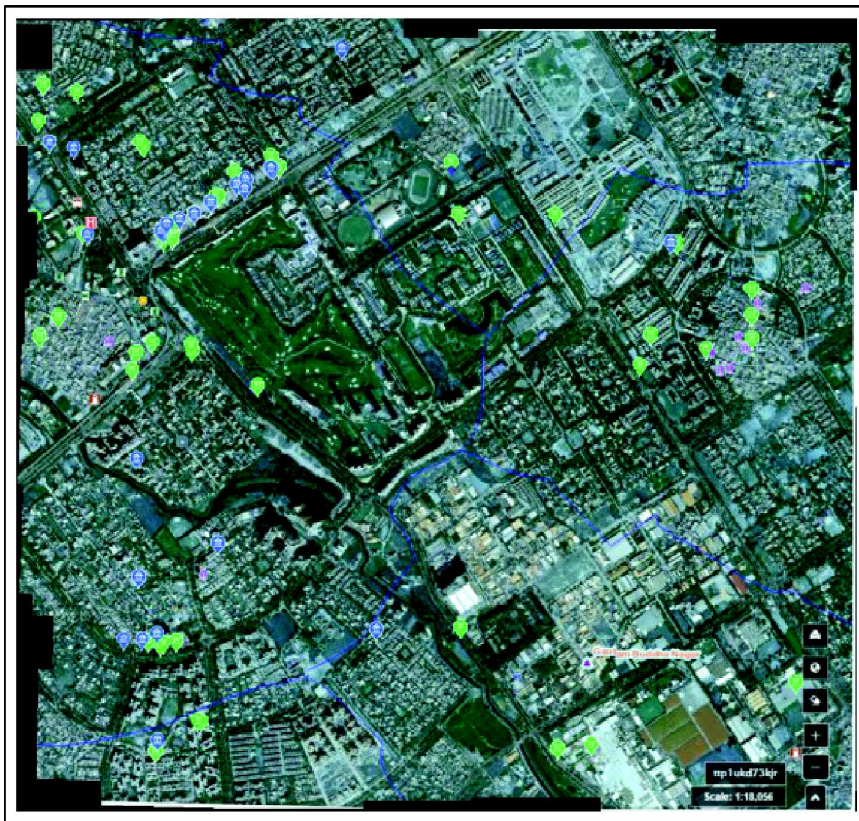


Figure 2: Stitched Image

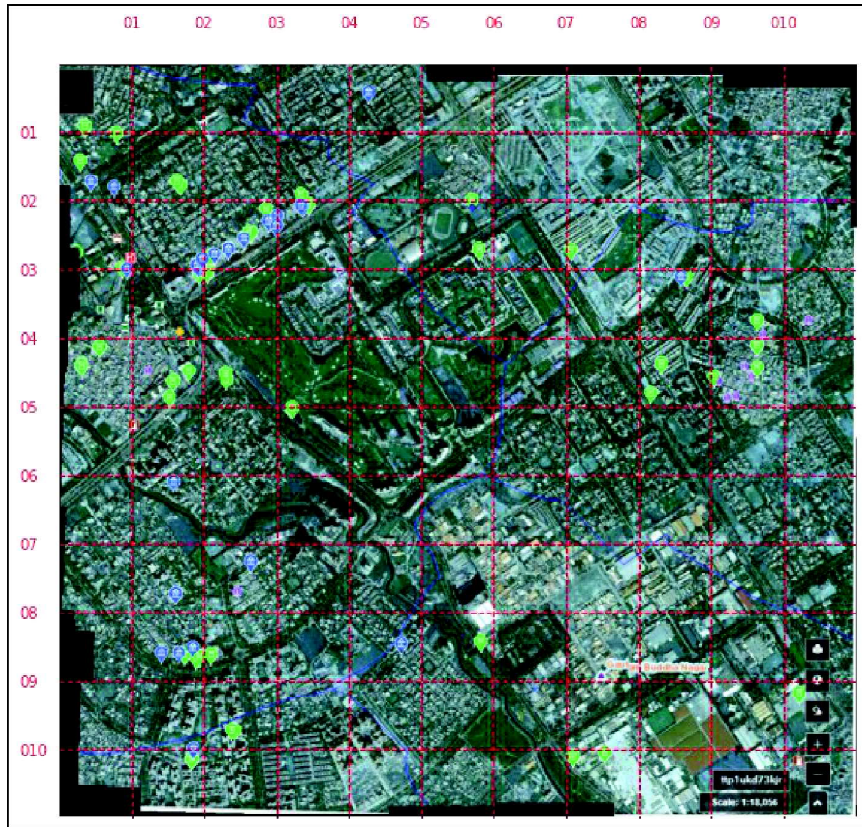


Figure 3: Stitched Image with Artificial Grid

The input images, each characterised by different attribute values such as shape, range of values, size, and memory consumption. These images, with varying dimensions and properties, form the basis for the stitched image with an AI grid. The resulting stitched image is defined by its shape (973, 1028, 3), a value range of 0 to 255, a size of 3000732 pixels, and a disk memory of 2.86 MB.¹⁶

The algorithm employed caters to a range of image parameters, including variations in size, orientation (up to 45 degrees), zoom level, angle, exposure, warping, time variance, and handling duplicate images. Furthermore, it accommodates diverse image formats like .jpeg, .jpg, .tiff, and .png. Additional formats which may develop in future can also be catered with ease in this code.¹⁷

Considering the hardware aspect, the code is designed to run on existing organisational hardware, requiring no specialised equipment. The dataset occupies 15.5 MB on disk. Timed code runs on different processors, such as Intel i7 12th generation with 16 GB RAM and Intel i5 10th generation with 16 GB RAM, demonstrate varying processing times at different confidence thresholds, emphasising the adaptability of the algorithm to different hardware configurations. The average time of processing came to be 52 seconds with intel i7 12th generation processor and 110 seconds for intel i5 10th generation processor.¹⁸

Impact on national security

The project outlined in the paper can significantly contribute to maintaining ‘Secrecy’ and ‘National Security’ for military commanders at various levels by leveraging artificial gridlines and the ability to customise maps. The project can assist in addressing these concerns:

- **Customisation of Maps.**
 - **Operational Security.** Military operations often require a high level of operational security to prevent the unauthorised disclosure of sensitive information. By enabling commanders to create customised maps with specific details relevant to their operations, the project ensures that only essential information is disseminated.
 - **Limited Information Exposure.** Instead of relying on pre-existing maps that may contain unnecessary information, commanders can generate maps tailored to their specific needs. This reduces the risk of unintended exposure of critical details that could compromise mission objectives or troop safety.
 - **Dynamic Map Updates.** The dynamic nature of military operations demands real-time updates and adjustments to maps. Traditional maps may become outdated quickly, posing a risk to operational effectiveness. The proposed project’s capability to generate real-time artificial grids and update maps on-the-fly ensures that military commanders have access to the latest information. This dynamic updating feature enhances the adaptability and responsiveness of military units.

- **Secured Communication.**
 - **Encryption and Authentication.** Communication within military units is highly sensitive, and ensuring the security of transmitted information is paramount. The existence of limited timed grid and limited access enhances the confidentiality and integrity of military communications. This mitigates the risk of unauthorised access to critical information.
 - **Decentralised Communication.** In military scenarios, centralised communication systems are vulnerable to disruption by adversaries. The proposed communication system, based on artificial gridlines, can operate in a decentralised manner. Each military unit can communicate within its designated grid without relying on a centralised hub. This decentralised approach minimises the impact of communication disruptions caused by localised attacks or electronic warfare.
- **Terrain Analysis and Tactical Planning.**
 - **Terrain Customisation.** Military operations often unfold in diverse terrains, from urban environments to rugged landscapes. The ability to customise maps based on specific terrains allows commanders to tailor their plans according to the geographical features of the operational area. This includes marking strategic points, assessing elevation changes, and identifying potential obstacles.
 - **Tactical Grid Integration.** The artificial gridlines can serve as a tactical reference for military units. By aligning operational plans with the grid system, commanders can enhance coordination and synchronisation among different units. The grid-based approach facilitates precise communication of locations and movements, reducing the risk of misunderstandings during complex operations.

- **Adaptability to Various Missions.**
 - **Mission-Specific Customisation.** Different military missions require different sets of information and maps. The flexibility of the proposed system allows commanders to create mission-specific maps tailored to the objectives at hand. This adaptability ensures that military units are equipped with the most relevant and mission-critical data, optimising their overall effectiveness.
 - **Multi-Domain Integration.** Military operations often involve coordination across multiple domains, including land, air, sea, and cyberspace. The proposed project's capability to create integrated maps covering various domains supports joint operations. This integration enhances the interoperability of different military branches and ensures a unified approach to complex missions.
 - **Reducing Vulnerability to Cyber Threats.** Since the project is not operating in open radio or cyber domain, hence, its vulnerability to cyber threat is extremely limited.
 - **Interoperability and Integration with Existing Systems.** Military organisations often have legacy systems and equipment that need to coexist with new technologies. This project ensures seamless integration with existing communication and mapping infrastructure in multifront military operations, coordination with allied teams is common. The project ensures interoperability with systems used by allied teams, including communication protocols and mapping standards. Standardising certain aspects of the artificial grid system can enhance compatibility across diverse military entities.
 - **Scalability and Performance.** During large-scale military operations, the system may experience a significant increase in workload, including communication traffic and mapping requests. Scalability measures are in place to accommodate higher loads without compromising performance. This will not involve any cloud-based solutions or load balancing or optimisation of data processing algorithms. In time-critical military operations, minimising communication and mapping latency is crucial. The project prioritises low-latency

solutions, considering factors such as data transmission speed, processing time, and response times for mapping updates.

- **Training and Adoption.** Military personnel, including commanders and operators, need to be trained on the use of the artificial grid-based communication and mapping systems. The new training can be imparted within hours as its not much different from existing one.
- **Transition from Traditional Systems.** Shifting from traditional communication and mapping systems to an artificial grid-based approach requires minor transition strategies. This can be implemented by military commander at any level with existing map-based training.¹⁹
- **Multiple Utility.** The project expands into a wider array of applications, highlighting the versatility of collaborative mapping and surveillance facilitated by drone technology. At the basic level it assists in mapping of unknown area and provides network extension and communication relay. Mapping functionality assists in monitoring forests, agriculture, and precision farming and afforestation. The artificial grid allows audit of infrastructure development and medical support, guidance of rescue teams and coordinating disaster relief. Military utility extends over parameter security and lethal force coordination and vehicle move planning across unknown terrain. The considerations and challenges in this innovative approach include aspects such as communication reliability, security measures, regulatory compliance covering collision avoidance, scalability, and autonomous decision-making. This comprehensive overview showcases the adaptability and potential impact of collaborative mapping and surveillance employing drone technology across a multitude of sectors, each addressing specific tasks and challenges crucial for the success of these applications.²⁰

Conclusion

The method provides a robust framework for leveraging drone technology, visual odometry, and image stitching to enhance disaster recovery operations. The algorithmic solution presented here contributes to the broader goal of empowering rescue teams with timely and accurate spatial information, ultimately improving the efficiency and effectiveness of disaster response efforts. As technology continues to advance, further iterations and enhancements to the proposed methodology are expected to play a pivotal role in shaping resilient disaster recovery strategies. Possibility can also be extended to create a Local Positioning System using drones, like GPS, Navigation with Indian Constellation, to provide accurate visualisation and localisation.

Endnotes

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Cyber-Diplomacy: A Crucial Step Forward in the International Relations of India

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Abstract

As the world is undergoing a drastic technological shift in the 21st Century, emerging technologies have occupied a prominent position in international relations as well. Due to this, 'Cyber Diplomacy' (CD) in this regard has come to play a crucial role between nation-states and is still in a developmental stage in public diplomacy and is hence called 'Public Diplomacy 2.0'. Cyberspace is further becoming increasingly post-liberal due to the gradual shift in the global order. CD has likewise taken over much of the global political system over the last several years and has become an essential segment in today's world as many countries have acknowledged the importance of engaging with other countries including India. Several countries' foreign ministries have also appointed 'Cyber Diplomats' due to the advancement of technology in geopolitics and the increasing politicisation of cyberspace. CD is indeed paramount for maintaining the long-term resilience of cyberspace in the facade of increasing threats from nation-states.

Introduction

The world is moving at a brisk pace with the 'Fourth Industrial Revolution' acting as a catalyst, heading to a 'Great Technological Transformation'. Cyber Diplomacy (CD) is considered the zenith of foreign policy in the 21st Century, beneficial for

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countries in a competitive geopolitical backdrop. As the international borders have become blurred to a point in the era of globalisation, countries are employing it for their advancement, which has impacted international relations of the world in an incredible way. Today, diplomacy has grown to include unexplored domains of policies related to cyber security. As countries have increased their presence in digital aspects, cyber security has paved its pathway to become paramount in their foreign and security policies. CD is the art, the science, and the means by which nations, groups, or individuals conduct their affairs in cyberspace to safeguard their interests and promote their political, economic, cultural or scientific relations, while maintaining peaceful relationships according to European Union (EU) CD toolbox.¹

Currently, CD is still in a developmental stage in public diplomacy and is hence called 'Public Diplomacy 2.0'. It is also called virtual diplomacy, digital diplomacy, or more typically comprehended as e-diplomacy. The emergence of the following domain began as several foreign ministers have set up offices exclusively devoted to cyber-space and have assigned 'Cyber Diplomats' in the former years due to the increasing politicisation of cyber-space and more comprehensive techno-geopolitical dynamics. The foremost government document to focus on the global facets of cyber threats was the journal of the 'United States (US) International Strategy for Cyberspace' which brought out the onset of CD. The following strategy delineates several areas such as law enforcement, military etc., and further relies on three pillars consisting of Defence, Diplomacy and Development. CD has taken over much of the global political system over the last several years and has become an essential segment in today's world as many countries have acknowledged the importance of engaging in it with other countries.² But, the feasible consequences of this differ considerably depending on the country involved as to whether they are engaged in offensive or defensive strategies.³ Japan, the US, Singapore, and South Korea believe it would enable world peace via cooperation.⁴ In addition to traditional methods of diplomacy, CD thoroughly affects international relations by delivering an alternative communication medium for governments.⁵ Nonetheless, cyber diplomats do not enjoy the same level of trust as compared to traditional diplomatic channels.⁶ On the contrary, CD can also negatively impact international relations if a country

discovers that another country has been trying to spy.⁷ The 1983 movie 'War Games' and 1993 publication 'Cyber War is Coming' by Arquilla and Ronfeldt accentuated the role of cyber warfare as a looming danger.⁸ In the present scenario, several major powers want to shape cyberspace as per their national interest and overpower the area of digital realm.⁹

CD and Global Order

Cyberspace is further becoming increasingly post-liberal due to the gradual shift in the global order in the hot off the press digital age. While the liberal global order (western dominated institutions) facilitated the expansion of cyberspace, the shift towards a post-liberal order has witnessed the 'Dawn of CD' in the present era. Several countries' foreign ministries have also appointed 'Cyber Diplomats' due to the advancement of technology in geopolitics and the increasing politicisation of cyberspace. It is used to thwart cyber attacks through persistent dialogue in a world where more countries are acquiring offensive cyber capabilities. The basic components in the CD toolbox are confidence-building efforts, cyber capacity building and the evolution of cyber standards. Cyberspace is both complicated and constantly evolving compared to traditional extents of land, sea and air where diplomacy set the firm foundation of the state's normative exchange. Also, the partnership in this domain has been fractured and off-the-cuff. Diplomatic strategies towards cyberspace are further fraught with convoluted challenges.

In the cut-off-the edge era, CD may enhance global amicability, whereas if cyberpunks acquire key to top government or secret military programs, this could direct to ruinous outcomes. Importantly, countries that do not utilise it are more potentially prone to get into confrontations or warfare, being unaware of the rival threats. Therefore, it is indeed paramount for maintaining the long-term resilience of cyberspace in the facade of increasing threats from nation-states. Some of the major types of cyber threats include click jacking, spyware, man-in-middle attacks, ransom ware, zero-day, denial of service attacks etc.

CD is to cyberspace what diplomacy is to international relations.¹⁰ The net of it is dilating and heightening swiftly, creating a cyber-international society. However, its role is much less evident in the media today than the cyber-attack incidents. Collaboration

in cyberspace is consequently a 'Choice'. In the present geopolitical scenario, its future poses a path of enigma and dilemma that comprises both challenges and opportunities and countries must focus on it as a way to build the future of international relations in the 'Age of Technological Revolution'.

CD contains measures to facilitate global standards, norms, and regulations in cyberspace, foster collaboration and avert cyber conflicts among countries to tackle cyber perils.¹¹ It is an inescapable instrument for less-capable countries in the contemporary epoch. Cyber operations are further not curbed by geographical frontiers and collaboration is vital to address increasingly complicated hazards. It is also an integral instrument for less-capable countries to showcase 'Soft Power' by shaping the foreign policy discretions of other countries through values, culture and approaches instead of coercion or sanctions. Though CD is crucial for countries, it has myriad challenges such as diverse stances among countries, lack of enforcement tools, gap in cyber security capacity, and difficulty in determining the basis of cyber attacks. International organisations like the United Nations (UN) and structures such as the Freedom Online Coalition¹² play a momentous part in it. Likewise, it is essential to incorporate non-state actors (civil society, private sector and academia).¹³ The UN norms for accountable state behaviour in cyberspace are a substantial international initiative to take the edge off cyber threats and conflicts.¹⁴

The Role of India in CD Domain

CD is nonetheless considered a new notion for countries. India has adequately proved itself as a nation with a reliable technology ground and is vigorously assuming its role in digital and cyber-related matters at multilateral platforms and global level.¹⁵ The CD Division of the Ministry of External Affairs (MEA) is a specialised branch dealing with global cyber governance matters, further engaged in several international forums besides the UN.¹⁶ India has also had cyber dialogues with different countries, such as Germany, Australia, Japan, and the US etc., and has been vocal in the global forums about diving into dangers posed by cyber terrorism/crimes.¹⁷ Furthermore, India and Israel have ventured on a shared task to improve their bilateral strategic cyber partnership.¹⁸ The Indo-Israeli cyber partnership has steadily

heightened through private-sector cooperation and investment.¹⁹ Some of the examples of the collaborations include Cymulate, Coralogix and Think Cyber India.²⁰ In West Asia, India is seeking to expand technical cooperation with the United Arab Emirates in cyberspace in both public and private sectors.²¹ India and EU in 2023, discussed cyber cooperation and mechanism in multilateral and regional discussions.²² India and Netherlands held the second cyber dialogue in New Delhi.²³ The Fifth Japan and India Cyber Dialogue was held in 2023 virtually to discuss cyber security strategies.²⁴ The G20 nations have further aimed at protecting against global cyber threats.²⁵ Similarly, India and Australia are taking their bilateral ties to an exceptional deck by collaborating in bilateral trade, cyber security and Artificial Intelligence (AI).²⁶ India and the United Kingdom have also pushed forth to boost partnership in the cyber realm.²⁷

Collaboration on cyber matters is also known to be a critical element of the bilateral relationship between India and the US.²⁸ Both countries have developed a wide-ranging strategic coalition that echoes their common values, democratic practices, national security and economic interests, and shared vision and regulations for cyberspace. Therefore, as part of CD, India should forge ahead further through 'Techno-Diplomatic Countries' to bolster its diplomatic collaborations that could help in addressing the rising cross-border cyber hazards securing international cyberspace. India has also been lately engaging in activities with the civil society, private sector and academia to design strategies for cyber policy and has further set up the centres of excellence and institutes of technology in several countries.

CD, thus, plays a monumental role in shaping the international ties of India. Much of the emphasis has been on shoring up domestic cyber security soundness and increasing capacity, which has been the priority of the diplomatic contributions overseas for India. The MEA and Ministry of Electronics and Information Technology have focused on cyber security through four initiatives such as the creation of cyber norms, managing internet governance, fostering the digital economy and focus on capacity-building. The digital public infrastructure such as the United Payment Interface, RuPay, etc., have performed an outstanding role in enhancing the CD of India forging new alliances, and magnifying the international position of the country. The MEA has

also taken an advanced step in establishing the New and Emerging Strategic Technologies Division, a transformative step indeed in the era of the 'Fourth Industrial Revolution'. Several top think tanks have also been proactive in the CD domain. In this milieu, the leading think tanks of India, the United Service Institution (USI) and the India Future Foundation have signed a Memorandum of Understanding to promote cyber security, CD, strategic affairs, defence security, privacy and data protection.²⁹ According to Major General (Dr) Pawan Anand, AVSM (Retd), Distinguished Fellow, and Head USI-Centre for Atm Nirbhar Bharat, "The tremendous growth of cyberspace in India and the opportunities it has to offer is also fraught with danger". In the new-fangled era, diplomacy in India has invariably accorded a prominent position to the state in its path to international negotiations. Nevertheless, the country has been ambiguous regarding apertures in international cyber security negotiations. Many multi-stakeholders such as civil society, government, private sector and media have not certainly defined the interest on how India can bring to global negotiating tables regarding the cyber security ecosystem.

Also, CyberPeace Foundation (CPF), one of leading organisations of India has been deeply involved in the cyber security domain. Furthermore, India has made momentous strides in the domain of technology, while cyber security remains a significant challenge presently according to Major Vineet Kumar, Founder and Global President of the CPF.³⁰ Furthermore, according to Kumar, the CPF works to combat cybercrime, cyber weapons, cyber warfare, and cyber terrorism on an international scale. Thus, CPF endeavours to make the internet a more protected, long-lasting, reliable and inclusive establishment for all cybernauts throughout the world. The organisation has often cooperated with government organisations, citizens, private companies, universities, non-government organisations, cyber security experts etc. The four pillars of CPF are Innovation and Research, Cyber Policy, Advocacy and Diplomacy, Inclusion and Outreach, Collaboration and Connection. The organisation has been further steering cyber exercises developed to enrich the cyber capabilities of countries, allowing them to engage and dissuade cyber attacks on their networks and infrastructure. Importantly, CPF aims to bring out first of its kind 'Cyber Security Index' which aims to grade countries and also the Indian states in the cyber security domain.

In the current geopolitics, as the bridge between the global North and South, India wants to contribute to cyberspace stability and has further exhibited to the world that technology can be harnessed for the greater good. The CD of India is seeking for 'Rules Based Order' in cyber-space and has also proposed a 'National Malware Repository' as a reference database to combat ransom ware and malware. Furthermore, the evolution of information and communications technology has led to new transformations in the domain of cyber-space and the global south has seen the quickest growth in internet users; however, it remains most susceptible to cyber hazards due to the absence of cyber capacity. India has acknowledged this quandary of the global south in cyberspace and has, therefore, assumed an alternative strategy established on active engagement and cooperation with a certain emphasis on the Global South in cyberspace. The principal pillar of the cyber approach in India lies in increasing the cyber capacity building in the global south countries. India through the Indian Technical and Economic Cooperation programme is also providing cyber security training, which concentrates on South-South Cooperation and capacity building, consisting of many fellow countries of Asia, Africa, and Latin America.

India has further integrated cyber security into the agenda of the Bay of Bengal Initiative for Multi-sectoral Technical and Economic Cooperation and The Indian Ocean Rim Association. Similarly, though the South Asian Association for Regional Cooperation (SAARC) countries have not yet set up regulatory governance and cyberspace risk management think-tank, Nepal (a SAARC member) and India have collaborated in modifying their cyber security goals via Track 1, Track 2 and Track 3 diplomacy.³¹

India, being the home to the largest world population, the government ought to design a cyber security strategy keeping in mind the national security of the country besides focusing on internet governance, cyber attacks, crypto currencies, data privacy and promoting a precise international framework for CD. Despite the wave of cyber attacks in India, the government has yet to put forth the 'National Cyber Security Strategy'. The government should consider elevating India as a trademark and reliable performer in the cyber security domain. The government is also required to drastically increase the 'Budgetary Provisions' in the cyber security

domain. The government should further provide federal funds to the states to enhance cyber security capabilities. India sets to become a global leader in CD, being one of the fastest-growing digital economies and home to an extensive reservoir of young tech talent.

Moving ahead, the 'National Security' for any country is always considered to be a top priority and maritime security also becomes very crucial to preserve the national security of India. Therefore, 'Maritime Cyber Security' is one of the critical areas with India playing a prominent role in the Indian Ocean Region. The country should likewise collaborate with other countries through platforms such as Quadrilateral Security Dialogue, Asia Africa Growth Corridor etc., to strengthen its CD and avert cyber-attack incidents, particularly against the growing threat from China. From the ancient to the contemporary era, 'War' has been a recurrent happening in the history of world and 'Cyber Warfare' is the modern era 'Warfare' and India ought to brace up for the new era warfare by increasing its state-of-the-art capacity building to avert future cyber attacks. The 2023 'India Threat Landscape Report' by Singapore-based cyber security firm Cyfirma states that India is the most targeted country internationally, facing 13.7 per cent of all cyber attacks.³² State-sponsored cyber attacks against India grew by 278 per cent between 2021 and Sep 2023, with several Information Technology (IT) companies witnessing the most heightened percentage of cyber attacks. Also, the COVID-19 pandemic years led to several challenges and threats across the world including a strong upsurge in cyber attacks. CD inexorably poses a possible threat to democratic governments. For instance, China has been using its 'Sharp Power' in waging cyber attacks on India, Australia, and the US etc. However, in a recent report, India, Taiwan and the US have stepped up to counter the cyber threats from China.

The advancement of technologies such as the AI, Big Data, and the Internet of Things has led to protecting the personal data has become very critical. In this context, the Indian government in 2023 passed the much-awaited 'Data Protection Bill'.³³ The Supreme Court of India further stated that the citizens have a fundamental right to privacy, ensured principally under Article 21 of the Indian Constitution.³⁴ Similarly, the IT Act, 2000 that focused mainly on cyber crime and electronic commerce introduced new provisions in the 2008 amendment including cyber terrorism to

protect the Indian citizens. The following act was administered by the Indian Computer Emergency Response Team to guide the Indian cyber security legislation, put forth data protection policies, and oversee cybercrime. In a special petition filed in 2021, the Supreme Court of India ruled that cyber attacks and data thefts is an offence under the IT Act of 2000 and the Indian Penal Code. As India does not have an exclusive cyber security law, it utilises the IT Act and several other sector-specific laws concerning cyber security measures. In 2013, the 'National Cyber Security Policy' set up security framework for public and private institutions to ably safeguard themselves from cyber attacks. The 'National Cyber Security Strategy' of 2020 aimed to further improve cyber security measures. At the Open-Ended Working Group established by the UN General Assembly, India has proactively advocated the necessity for the UN members to design shared insights on how international law applies to cyberspace under the auspices of the UN. However, the strategy and approach of India to cyber norms formulation will need periodic evaluation due to the largely expanding technology and security transitions in the country and overseas. Vigorous engagement supported by a dynamic multi stakeholder ecosystem will facilitate the crafting of international cyber security governance embedded in the strategic and diplomatic requirements of India.

Through the ongoing National Cyber Security Policy (2020-2025), India has the prospects to align its domestic policy with its international aspirations.³⁵ Indispensably, while the cyber security initiatives of India have been predominantly defensive, the government should however increase the ability for 'Offensive Pursuits' to deal with state and non-state threats.³⁶ The Ministry of Home Affairs and also the Ministry of Defence should be altogether prepared to handle the increasing cyber attacks and also contemporing to avert such threats in the coming years in the present unstable geopolitical setting. Presently, as per the State of Cyber Security 2023 report by Information Systems Audit and Control Association, 40 per cent of Indian cyber security teams are understaffed.³⁷ Consequently, in this regard the Indian government should consider increasing the openings in the cyber security domain focusing on research and development in both technical and non-technical segments. Furthermore, as India has often been facing two front cyber threats from Pakistan and China,

it becomes really crucial to India to strengthen its cyber security and leading-edge technology capabilities. The role of Public-Private Participation is further essential to shape the CD of India in several aspects. In this context, the Indian National Security Council Secretariat has recently released proposals by a collaborative public-private working group on cyber security that sought to bolster the capability to curb the increasing threats from cyberspace. Also, the regular involvement of armed forces along with bureaucrats, diplomats and the other government agencies in devising cyberspace strategies is highly crucial.

Conclusion

On the whole, India in the 'Multipolar world order' must thus consider playing the role of a 'Rule-Shaper' apart from actively supporting the rising powers to increase cooperation in CD and also create awareness among the citizens about its risks.

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Adoption Of Tactics, Techniques, Procedures and Technology From Russia Ukraine War

Colonel Ratnadeep Das[®]

“The country needs to understand, update and adapt to the fast-changing tactics and challenges of modern warfare, with the advent of new technology”.

–Prime Minister Narendra Modi

Abstract

The Russia Ukraine War has unambiguously reiterated the coexistence of competition and conflict. It also reignited the debate of short conflicts versus prolonged wars. Various facets of international relations, collective security and deterrence have come to the fore. More importantly, this conflict has intrigued the militaries world over. While demonstration of disruptive military technology has made the world take note of the new facets of warfare, the assumption of diminishing utility of conventional platforms stands challenged as well. The conflict merits a detailed scrutiny by the Indian Armed Forces. It is prudent to carry out a thorough audit of own operational doctrines and war fighting tactics, techniques and procedures alongside technology infusion and equipment performance. The lessons have primarily emerged in the domains of jointness, combined arms warfighting, multi domain operations, massed and precision firepower, survivability of mechanised platforms,

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employment of long range vectors and unmanned systems vis-à-vis airpower, logistics sustenance and warfighting stamina, information warfare and disruptive technologies. The most important lesson for the Indian Armed Forces, however, has been the need for indigenisation of the defence industry/eco-system. Indian wars need to be fought with Indian solutions. Technology needs to be embraced through a pragmatic equipment philosophy accompanied with organisational structuring sans biases, dynamic evolution of force employment and realistic training and validation.

Introduction: Contours of the Russia Ukraine Conflict

Lessons from military campaigns have always led to evolution of Tactics, Techniques and Practices (TTPs). The Russia-Ukraine War has been an inflection point in the trajectory of warfare and a watershed moment in the domain of international relations, geopolitics and national security. Certain key facets are enumerated in the succeeding paragraphs.

General Rupert Smith, remarked in his book, *The Utility of Force*, “War as a battle in a field between man and machinery as a massive deciding event in a dispute in international affairs, such war no longer exists”.¹ Such a flawed assertion, has been conclusively put to rest. Full-fledged conflicts will continue to coexist with the ever expanding spectrum of grey zone warfare. Duration of conflicts cannot be accurately predicted. The war has shown that nations with significant war waging stamina, supported by a large domestic military industrial complex, and a strong central government may resort to prolonged conflict, even at the cost of dire economic consequences.

At the same time, Ukraine’s absence of nuclear deterrence has in all probability emboldened Russia in executing such a large scale military campaign. On the other hand, Russia’s nuclear signaling has prevented the North Atlantic Treaty Organisation/the West from direct military intervention and prevented escalation. Economic sanctions and diplomatic isolation have also not been able to deter continued kinetic actions by Russia.²

The conflict has also seen Diplomatic, Information, Military and Economic interplay. The fallacy of economic interdependence as a safeguard has been proven beyond doubt. Economic interdependence and trade relationships do not necessarily guarantee safeguards against conflict and confrontation. Moreover, the calibrated and graduated military assistance by the West, not commensurate to the actual combat requirement has shown the limited efficacy of partnerships short of formal military alliances. Furthermore, the drawbacks of countries relying on a single source for military hardware have become abundantly evident.

Russia's military operations in Ukraine have illustrated that armed forces are inadequately trained and resourced for combined arms war fighting. A lack of cohesion and unity in command will render the forces unable to achieve the desired military end state. The war has also witnessed the manifestation of multi-domain operations with use of drones, loiter munitions and hypersonic weapons in concert with cyber sabotage, economic sanctions and diplomatic coercion. Drones, electronic surveillance and space-based observation make concealment extremely difficult. Space based Intelligence, Surveillance and Reconnaissance (ISR) provided by United States satellites helped Ukraine in detecting the Russian build up towards Kyiv and aided them in posturing their forces accordingly. Effective ISR also assisted in target acquisition for engagement in depth by High Mobility Artillery Rocket System (HIMARS) and the sinking of the Russian guided missile cruiser Moskva.

Russia has also lost hundreds of tanks, armoured fighting vehicles, multiple rocket launchers and self-propelled artillery systems in the ongoing conflict mostly to Unmanned Combat Aerial Vehicles (UCAVs).³ Low cost anti-tank weapons also pose an existential risk to tanks in contemporary and future battlefields. However, in spite of significant tank losses, both the Russians and Ukrainians acknowledge that tanks are still essential for manoeuvre and offensive operations, provided the employment is part of a combined arms team.⁴

Whereas, on the artillery front, the Russians have caused significant casualties, enabling Russian advances (albeit slow), and slowing down Ukrainian attacks. Ukraine in turn has demonstrated the effective use of guided artillery and rockets

such as HIMARS. Precision artillery fires against high value targets like Antonivskyi Bridge in Kherson, Russian ammunition dumps and headquarters have greatly assisted Ukraine's military resistance.⁵

In Ukraine, neither side has been able to achieve air superiority under the presumption of a contested airspace. A layered and tiered Air Defence (AD) grid obviates establishment of air control. Russian Air Force failed to conduct effective suppression of Ukrainian AD. In fact, Russia and Ukraine have primarily relied on use of massed and precision strikes by rockets and missiles.⁶ Predictable patrol patterns and deployment of naval platforms like Moskova was against established TTPs. Non availability of anti-missile defence resulted in inadequate countermeasures against the incoming anti-shipping Neptune missiles. Operating, naval assets at close proximity to shores also led to inadequate response times.⁷

While, Russian equipment has exhibited considerable weaknesses against qualitatively superior western equipment. Russian tanks were destroyed with apparent ease by Javelin and new generation light anti tank weapon system, drones and top attack loiter munitions. However, insurmountable quantities of Russian Cold War era weapons and force levels have enabled relative Russian military success in a war characterised by attrition. Modern combat systems provided to Ukraine by its allies, even though qualitatively superior, have achieved limited success in the face of Russian quantitative overmatch. In addition, Russian war waging stamina achieved through vast stockpiles of ammunition and weapons have sustained such a prolonged campaign.⁸

Another important aspect of this war has been the 'Narrative' of war. A convincing and acceptable narrative is essential to shape public opinion, provide legitimacy to the actions taken, and enhance the morale of its forces. Another, contestation in the information domain is to take necessary actions to dominate the narrative battle by preventing the views from the opposing side to influence the global and regional populace at large. Videos from the battlefield, leaked drone surveillance and other forms of digital communications have made Russia's invasion of Ukraine the most internet-accessible war in history.⁹

A key aspect here is of survivability and resilience. When posed with a formidable adversary with long range vectors and preponderance of artillery, dispersal is the key to survivability. Ukraine successfully evaded Russia's initial wave of strikes by dispersing its arsenals, aircraft and logistic echelons.¹⁰ Moreover, the commitment to defend their country has enabled Ukraine and denied Russian forces their objectives despite being outgunned and outnumbered.

Adoption of TTPs and Technology

Theaterised joint forces should be evolved based on existing threats and availability of resources besides other considerations. The restructuring should also be able to cater for changing ways and new domains of warfare in future.

A networked ISR is essential. Space and air-based assets alongwith multi-domain surveillance and reconnaissance capabilities with agile ISR structures would be required to gain situational awareness. Artificial Intelligence (AI) enabled systems would be essential for processing voluminous data alongwith a networked environment for speedy dissemination.

For communication and inter-operability an effective Command and Control setup, a seamless ISR grid and a responsive AD architecture can only be achieved by putting in place a resilient communication network. Legacy systems that preclude interoperability need to be upgraded/replaced. Concurrently, transition to digital combat must be expedited by creating military cloud and data enterprise systems.

Disruptive technologies like quantum computing, communication and surveillance, AI enabled ground, naval and aerial assets, revolution in logistics through additive manufacturing, advancement in bio mechanics and synthetic biology need to be viewed as opportunities and resources need to be dedicated for advancements in these domains.

For enduring survivability of mechanised platforms it is crucial to counter the threat of lethal anti-tank systems, drones and loiter munitions, it is imperative to upgrade own mechanised platforms with fused sensors, drone integration and active protection systems as well as Electronic Warfare (EW) jammers and counter-drone systems.

At the same time, missiles and rockets remain the primary vectors to cause destruction and large scale attrition of adversary's combat potential. These can be effectively employed in an intense AD environment. While precision fires would be the need of the ground forces, target profile and the lead time to re-coup the short supply precision weapons need to be factored. Massed fire at times can substitute the need for precision.

The potency of own airpower to penetrate adversary AD umbrella merits a realistic examination. Option of employing UCAVs, swarm drones and manned/unmanned teaming drones need to be explored. Accordingly, induction of drones and allied technologies into the armed forces, needs to be expedited as part of a well-defined roadmap.¹¹ Achieving favourable air situation in future wars may become difficult to achieve in a hostile AD environment. Hence, land operations, may have to be conducted without assured air support calling for greater integral fire support and AD measures. Airborne operations have become unviable with the proliferation of shoulder-fired missiles. Hence, there is an urgent need to equip all slow-moving platforms with state of the art EW suites.

Operational readiness of sub systems on naval platforms like missile fire control radars, EW systems, close in weapon system, hull integrity and maintenance issues are critical.

At the same time, survivability of high-value assets is essential especially, during the opening phases of the war. Hardened aircraft shelters, tunnels etc. are required to withstand enemy strikes. Dispersal of assets is imperative. The recent conflicts have also amply demonstrated the importance of mass and force regeneration.

Another imperative of war demonstrated by the conflict in Ukraine is logistics sustenance. Current war wastage reserve rates for weapons, ammunition and equipment require review. Similar exercise is also warranted for other critical war-fighting stocks. This in turn implies realistic analysis of the current operational logistics policy and architecture along both fronts.

A sine-qua non of war effort going forward is indigenisation of defence industrial complex. Indigenous defence industries need to scale up their capacities and capabilities as well as absorb niche technologies to meet the requirement of the Indian Armed Forces.

Recommended Changes in the Way Indian Armed Forces are Organised, Trained, Equipped and Employed

Based on lessons drawn from recent conflicts, few pertinent recommendations, that merit consideration are tabulated in relevant heads as under:

	Lessons	Recommendations	Remarks/Specific Actions
●	Organisational Restructuring		
	Unity of Command Within a Single Theatre	Integrated theatre commands.	Integration of ISR, special operations, AD, information warfare, cyber, space, logistics.
	Agile and Modular Structures	Combined arms tactical groups.	<ul style="list-style-type: none"> • Integrated Battle Groups. • Combined Arms Battalions.
	Formalise Joint/ Integrated Structures	Standardisation of existing adhoc structures.	<ul style="list-style-type: none"> • Staffing, equipping and Command, Control, Communication arrangements. • Review of existing war equipment.
	Enhanced Firepower	Rocket artillery, loiter munitions and armed helicopters at division level.	Acquisition of extended range Pinaka, loiter munitions and advanced light helicopter (Weapon System Integration).
	Sensor-Shooter Integration	Responsive sensor-shooter architecture.	<ul style="list-style-type: none"> • Reversion of unmanned aerial vehicle to serial advanced technology attachment. • AI infused integration of aviation, EW/electronic intelligence, ground and space based ISR assets.
	Joint Communication Infrastructure	Resolution of tri-services inter-operability issues.	<ul style="list-style-type: none"> • Proliferation of Defence Communication Network to division level. • Integration of network for spectrum and compatible software defined radio.
	Force Creation and Regeneration	<ul style="list-style-type: none"> • Empowerment of Central Armed Police Forces (CAPFs) to undertake defensive operations. • Creation of pool of Reservists. 	<ul style="list-style-type: none"> • Doctrinal clarity and systems inter-operability with CAPFs. • Leverage exiting 'Agniveers'.
●	Equipment Philosophy		
	War Stamina	<ul style="list-style-type: none"> • Defence indigenisation. • Reduce production lag to optimise war wastage rates. • Reduction of import dependencies and diversification of import base. 	<ul style="list-style-type: none"> • Incentivise private defence industries. • Agreement with foreign partners for expeditious supply of critical war like stores.

	Lessons	Recommendations	Remarks/Specific Actions
	Disruptive Technologies	Research and development of disruptive technologies.	Incentives to indigenous industry and academic institutions.
	Terrain and Theatre Specific Platforms	Induction of light weight platforms for Northern Borders.	<ul style="list-style-type: none"> • Light tanks. • Self-Propelled AD gun missile system. • Light weight self propelled artillery.
	Layered AD	Cross spectrum aerial threat mitigation with integrated Control and Reporting.	Very short rang AD system, long range surface to air missile, new generation man portable AD system, counter drone systems.
	Long Range Precision Fires	<ul style="list-style-type: none"> • Range extension of multiple launch rocket systems • Development of guided rockets. 	<ul style="list-style-type: none"> • Induction of extended range Pinaka. • Development of tactical missiles to bridge missile and rocket range gap.
	Enhanced Capabilities for Infantry	Multi Domain Operations capable force.	<ul style="list-style-type: none"> • Enhanced mobility and firepower • Manportable surveillance. • All terrain logistic re-supply.
	Future Ready Mechanised Forces	Operations in emerging operation scenarios.	Future ready combat vehicle and future infantry combat vehicle programmes.
	Modernising Combat Engineers	Modern military solutions.	<ul style="list-style-type: none"> • Modular short span bridging systems, new generation mines • Geographic information system based minefield recording. • Wireless improvised explosive device detonation, • Reconnaissance and chemical, biological, radiological, nuclear vehicles, 3-D structures.
	Communication Integrity and Latency	Small Satellite Constellations in Low Earth Orbits and Launch on Demand capability.	<ul style="list-style-type: none"> • Empowerment of Defence Space Agency. • Joint development by Indian Space Research Organisation and space start ups.
	Operational Data-link (ODL)	Development of tactics based on ODL across platforms.	Shrinking Observe, Orient, Decide, Act Loop.
	Hypersonic and Stealth Missiles	Focus on indigenous development.	Combat overmatch.
	Logistics	Timely, Resilient, Optimal and Tailor-made model of Logistics.	<ul style="list-style-type: none"> • Government owned contractor operated and VISA model. • Tunnelling. • Block chain based logistics systems, additive manufacturing, palletisation of loads. • Drones, mechanical handling devices and all terrain vehicles.

	Lessons	Recommendations	Remarks/Specific Actions
■	Force Employment		
	Multi Domain Operations	Joint operation doctrine and structures and interfaces with civil agencies.	Flexible and modular command and control structures.
	Airpower in Responses Short of War (RSOW)	Parameters, concessions and tolerances for equipment readiness and serviceability to be modified for RSOW.	Tactics, and operation support philosophy need to cater for a graduated response ladder.
	Role Specific Flights	Review existing structure of squadrons (helicopters and transport units) to include integral specialist flights.	Critical roles must be identified, and specialist flights created who train and develop niche capabilities and skills.
	Massed Artillery	Saturation of targets.	Missile and air campaign as part of own concept of operations.
	Mechanised Tactics	Review of combat groupings.	Grouping of ISR assets, self-propelled artillery, aviation, AD Platforms, drones and UCAVs with mechanised formations.
	Combined Arms Training	Combined arms exercises in multi-domain operations environment.	Test bedding of Joint Theatre Commands and independent brigade groups needs to be incorporated in the same.
	Junior Leadership	Future operations warrant high standard of junior leadership.	Professional military education to be tailored accordingly.
	Morale, Motivation and Will to Fight	' <i>Agniveer</i> ' concept needs to overcome apprehensions in their combat performance.	Prospects to be made more lucrative to include enhanced insurance and death benefits.
	Joint Planning Process	Joint planning adopted from the West are alien and non-contextual.	Need to develop a common and indigenous planning process.

Conclusion

Military conflicts offer diverse lessons. Armed forces need to correctly contextualise the lessons prior to adopting the same. Each conflict also brings to fore certain contrarian military thoughts. In this context, the Russia-Ukraine conflict merits closer scrutiny and analysis. However, what has been well established is that Indian wars need to be fought with Indian solutions. Since budgets

will always be limited, the threat landscape has to be addressed with necessary prioritisation. Technology needs to be embraced through a pragmatic equipment philosophy accompanied with organisational structuring sans biases, dynamic evolution of force employment and realistic training and validation.

Endnotes

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Lessons from the Russia-Ukraine Conflict and Implications for Mechanised Operations in the Indian Context

Colonel Kapil Khanduri®

Abstract

With the Russian invasion of Ukraine on 24 Feb 2022, war returned to Europe, revisiting the sites of some historical battlegrounds of World War II. Russian security concerns about Ukraine joining North Atlantic Treaty Organisation were major factors. Most nations expected a behind-closed-doors solution where Russia would be offered some concessions, leading to a resolution of the situation. However, when the backlash came, no one expected such a violent one. The conflict has continued for a prolonged period with no end in sight and has witnessed the unfolding of large-scale mechanised operations. Thus, offering invaluable lessons for mechanised operations in the Indian context. The article delves into this conflict's strategic, operational and tactical implications, focusing on their relevance to India's military landscape. Analysing the role of advanced weaponry, hybrid warfare tactics, and the impact of technology on modern warfare, it identifies key takeaways for Indian mechanised forces.

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Introduction

Mechanised operations have played a crucial role in the history of warfare since the first use of tanks in World War I. These fluid operations are characterised by the coordinated use of mechanised infantry, tanks, artillery, aerial platforms and other supporting assets to gain battlefield superiority, seize and hold objectives, and conduct offensive or defensive operations. Since the start of the Russia-Ukraine conflict in Feb 2022, much hype has been generated around the use of new-generation technology and its application on the battlefield resulting in a rapidly changing battlefield milieu layered with defining characteristics in multiple domains and, thereby, creating a significant impact on mechanised operations. Few also question the relevance of mechanised warfare in the technologically advanced modern battlefield.

Contrary to the belief that future wars will be short, swift, limited in scope and will not see large-scale employment of mechanised forces, one fact stands proven that mechanised operations are still the dominant and the most successful aspect of modern warfare. This article aims to comprehensively analyse the military lessons relevant to mechanised warfare from the ongoing Russia-Ukraine conflict by examining the strategies, tactics, and technological advancements employed during the conflict.

Russian Tactics

Considering the superiority in numbers, everyone expected the Russian forces to roll over Ukraine in a short war. Initial advances by the Russian troops, 200 km deep into Ukraine were only possible due to the large-scale use of mechanised units and reinforced the view that Ukraine would capitulate soon. Contrary to popular belief, despite the early success and Russian forces reaching the outskirts of Kyiv in the first few days, the operations beyond did not materialise as expected. The photographs of long Russian mechanised columns halted on highways rather than moving and taking the battle into the heart of Ukraine baffled everyone.

Instead of exploiting early success and the inherent characteristics of mechanised forces, the Russian mechanised forces got sucked into a battle of attrition in the urban centres. The confinement of armoured vehicles to roads and not exploiting cross-country mobility has raised many questions. Though, it may be due to the flawed timing of the attack just after the melting of

the snow, making the ground unsuitable for mass manoeuvres. The vulnerability of armoured columns on roads and urban centres without securing the flanks by utilising infantry was exposed. Also, the inability of the Russians to capture cities resulted in logistics failing to reach frontline units.

As the war progressed and entered the second year, the Russians have modified their tactics. These are:

- In the initial phases of the war, the Electronic Warfare (EW) capability of Russia was poorly integrated.¹ By some estimates, Russia now has almost one major EW system every six miles of the battlefield.² These systems are predominantly oriented towards defeating unarmed aerial vehicles. A recent study says Ukraine is losing 10,000 drones per month.³
- Russian infantry tactics have shifted from trying to deploy uniform battalion tactical groups as combined arms units of action to a stratified division by function into line, assault, specialised and disposable troop.⁴ These are further grouped into task-based groupings. Line troops are being used mainly for ground-holding and defensive functions. Disposable troops are being used to continuously skirmish Ukrainians, identify their positions and then target them with specialised troops to maximise destruction.

Ukrainian Tactics

In the first few months of the war, when the terrain was unsuitable for mass mechanised manoeuvres, the Ukrainians utilised their armour and mechanised forces to channelise Russians into pre-selected killing zones and caused heavy attrition using maximum firepower. The ability of mechanised forces to turn the tide of a conflict was evident during the counter attack on the Russian troops at the Hostomel Airfield during the first few days of the war. Had the airfield fallen into Russian hands, the war's outcome would have been different. The bold use of mechanised forces by Ukraine in the counteroffensive in Sep 2022 in the Kharkiv and Kherson areas utilising basic tenets of manoeuvre warfare and exploiting the inherent characteristics, resulted in considerable success.

Despite the evident qualitative and quantitative disadvantage of mechanised forces, the examination of documents, photographs and videos indicates that Ukrainians seemed to have followed the basic concepts of mechanised warfare better than the Russians and used their mechanised forces as a rapier as they should be and not like a battering ram.⁵

As the war has progressed, Ukrainian forces have combined existing and new technology to develop three capabilities that have greatly enhanced their performance. First, they have developed a genuinely integrated command and control structure.⁶ Second, the Ukrainian army is able to get persistent surveillance of battlespace.⁷ Third, they have innovatively utilised artillery, drones, and new generation loiter ammunition to damage Russian forces significantly.⁸ These three aspects combined have had a considerable impact on mechanised operations.

Duration of Conflict and Logistics

Any campaign, however, carefully planned, with a considerable force level and asymmetry in multiple areas of military prowess, does not cater for intangibles that can prolong a war beyond expectations. The Russian concept of logistics relies heavily on using railroads and pipelines to push forward supplies,⁹ which is typically possible around roads and cities. Hence, the urgency to capture cities was seen in the Russian offensive. The towns did not fall at the pace expected. This exposed the critical weakness in the logistics plan for the Russian offensive over such a vast frontage. Hence, the stretch and stamina of logistics will always be a major decider in the time and spatial reach.

Urban Warfare Challenges

Mechanised forces offer adequate protection and pack abundant firepower to counter a threat on the battlefield. However, when utilised in an urban environment, they need to be protected adequately and augmented suitably to prevent exploitation of vulnerabilities by the adversary. The addition of irregulars or civilians as potential threats further adds to the situation's complexity. The ongoing conflict has constantly witnessed intense fighting in urban environments, which has proved to be a significant challenge for the mechanised forces from both sides.

Importance of Intelligence, Surveillance and Reconnaissance

The element of surprise was not there during the build-up of the Russian offensive. The early concentration and detection led to Russian forces being monitored from an early stage, which enabled Ukraine to undertake preparation to hold the Russian offensive before the war had begun. It can be safely stated that concealing mechanised forces from air, ground, and satellite observation in today's battlefield is near impossible and will be a significant factor in future too.

The Ukrainian offensive in Kharkiv and Kherson used light vehicles to slip through gaps in Russian deployment, utilising information from drones and human intelligence inputs and forming surveillance screens behind the Russian defensive lines to cut off the retreating enemy and guide their forces. This was the classic use of the concept of 'Reconnaissance Pull'.¹⁰ The success reinforces the fact that skilful and innovative employment of basic tenets of mechanised warfare suitably augmented with technological advancements can still pay rich dividends on the battlefield.

Mechanised Forces versus Anti-Tank Weapons and Drones

The United States, United Kingdom, Germany and other countries supplied over 4,000 Javelins and 3,500 next-generation light anti-tank weapons to Ukraine to build up the anti-tank potential.¹¹ In addition, rocket propelled grenades and often locally made molotov cocktails augmented the capability of the Ukrainians. Russian tanks with Explosive Reactive Armour (ERA) panels and armoured vehicles with a metallic cage or mesh for protection were adequately seen on news channels.

Yet, the innovative methods used by Ukrainians, such as bombarding the fighting vehicles with dozens of projectiles to defeat the ERA and other protective suites, has resulted in considerable destruction of the armoured vehicles and confirmed the efficacy of modern-day anti-tank weapons against the armoured fighting vehicles. Also, the vulnerability of tanks to top attack munitions exploiting the weakness of minimal armour protection has repeatedly been exposed.

The Ukrainian drones have also exploited this vulnerability and stands out as a valuable lesson to commanders on the battlefield. On one end, the Ukrainians used hi-tech drones such

as the Bayraktar and Switchblade Kamikaze drones. On the other end, innovative use of cheap, locally made and commercial drones has been done to attack Russians with pinpoint accuracy. Even commercial drones have been modified to drop impact-initiated bombs and grenades to inflict casualties on troops day and night.

Russia has now integrated at least one drone jammer gun per platoon.¹² Russia is also attempting to generate fake drone signatures to confuse Ukrainian sensors and prompt the engagement of ghost drones.¹³ Also, the Russians have started using drones to advance, along with their mechanised columns, giving the crew early warning and over-the-horizon visibility. These actions have enhanced their effectiveness on the battlefield.

Combined Arms Approach and Firepower

At the start of the war, the Russians were estimated to have approximately 1,500 fighter aircraft against 150 effective fighter aircraft of Ukraine.¹⁴ Yet, the effort to dominate or control the skies, even though out-matching Ukraine in quality and quantity, was not seen. Attack helicopters and helicopters in support roles were seen in the conflict. However, their susceptibility to air defence fire, especially Man Portable Air Defence Systems (MANPADS), resulted in a heavy attrition rate on both sides. Whatever the reasons, the apparent absence of the air dimension to deliver lethal long-range firepower on the adversary has been baffling.

MANPADS have become primary air-defence assets on the battlefield. Indeed, the threat from them has forced tactical adaptation on both sides, with ground-attack aircraft and helicopters having to fly extremely low and adopt 'Lofted Launch' tactics for unguided missiles, reducing the effectiveness of these attacks.

The war in Ukraine has demonstrated that firepower can decisively impact the outcome of battles, undeterred by enemy, terrain and weather. With the war's progress, the scope and utilisation of firepower have considerably increased.

Russia has employed firepower in a destructive role; the destroyed cities and villages in Ukraine stand testimony to the lethality of firepower. The Russian Army has utilised drones to effectively locate and target Ukrainian fire assets, sometimes tracking them to their bases. The use of new-generation ammunition with enhanced range, cluster bombs, and at times

thermobaric weapons displayed the lethality of these bombs. Russia has also leveraged the demonstrated use of firepower coupled with the nuclear threat to prevent North Atlantic Treaty Organisation countries from directly being involved in Ukraine.

On the other hand, the Ukrainians have innovatively employed firepower in various phases of battle. The initial months saw Ukrainians executing ambushes by tracking Russian forces and utilising deadly firepower from guns and rockets to cause heavy attrition on the Russian convoys at pre-selected killing zones on roads, junctions, or choke points. In the counteroffensive, emboldened by the arrival of western new generation firepower assets, the Ukrainians have heavily relied on firepower to target logistics dumps, command and control centres, communication networks and frontline troops.

Other Aspects Related to Mechanised Operations

As the war progressed, pictures of armoured vehicles with the letter 'Z' painted on Russian vehicles were common on social media. Recently, Ukrainian soldiers wearing coloured tapes on helmets and uniforms have also been seen. As the technology further finds application on the battlefield, the practice of discerning the identity of own troops on the battlefield, popularly known as Identification of Friend and Foe (IFF) in military parlance, assumes great significance not only for individuals but for these sophisticated drones and munitions too.

Mechanised operations use sophisticated command and control systems to coordinate and synchronise the actions of various units, ensuring efficient execution of missions. These systems are based on the use of the electromagnetic spectrum. With the enhanced application of technology, this set-up is becoming a target itself, and disruptions can cause a lack of coordination in battles. The Russia-Ukraine war has highlighted the importance of this aspect in detail.

Implications or Mechanised Operations in the Indian Context

Out of the many lessons that have emerged from the war, one thing is for sure that the world has not seen the end of tanks or armoured vehicles. These forces are here to stay and will remain the primary means to achieve decisive results on the battlefield. The Russia-Ukraine war has proved that modern anti-tank weapons

can significantly damage tanks or armoured vehicles. Investing in active protection systems and protective suites will significantly enhance the combat capability of mechanised forces.

It is high time that the need for an effective battlefield management system is met. Such a system should look beyond the sub-unit or unit-level interlinking. It should be able to provide terrain input and the location of all friendly forces operating in the geographical area. It should also be able to provide the ability to communicate digitally and mark enemy dispositions and also offer a direct feed from drones and surveillance assets down to the tactical level.

The ad hoc method of creating combat groups post-mobilisation and working in tight silos in peacetime will not suffice in future. Some of our frontline mechanised units should be permanently reorganised; they must include a mix of necessary components as a homogenous entity inherent in its peacetime organisation and have armour, mechanised infantry, artillery, air defence, combat engineers, signals, EW assets, tactical drones for surveillance and targeting, medical and adequate logistical elements as per the operational role. Each component's matching mobility and communication interoperability must also be addressed.

Drones' flexibility and capability enhancement on the battlefield must be exploited. At the operational level, India needs to dominate the battlespace with drones that provide persistent coverage of the battle space and the ability to engage strategic targets. Simultaneously, introducing easy-to-launch drones will significantly enhance the combat effectiveness of a tactical unit. These drones must be interlinked into the battlefield management system to improve the combat effectiveness of armoured vehicles. Additionally, we must incorporate them in our training and include use in tactical and operational doctrines.

The third dimension needs to be intimately integrated at the tac level, cutting across restrictions of domains, i.e. aircraft, attack helicopters, utility helicopters and drones. The present system of ad hoc integration during annual firing or other training events is just for the show and needs to be done away with. The communication compatibility with the aerial assets at the tactical level requires a complete overhaul.

There is an inescapable need to re-look at our intelligence, surveillance and reconnaissance architecture and ensure the information is available to the frontline mechanised forces in real-time. The existing system has some serious drawbacks that need attention on priority.

India must focus on developing Counter Anti-Access/Area Denial (A2/AD) measures, which our adversaries could employ in a conflict. This includes investing in long-range precision strike weapons, robust air defence, anti-aircraft and anti-drone systems, and EW capabilities to neutralise potential threats even at the tactical level. Developing tactics and systems that allow for mobility and rapid manoeuvrability despite A2/AD challenges should be a priority.

The consumption of ammunition and supplies can never be predicted has been made amply clear in the Russia-Ukraine conflict. Hence, more than merely adopting the push or pull system of logistics supply will be required. The western armies tend to have high 'Tooth-to-Tail' ratios, with as many as ten support personnel for every combat soldier, while Russia has fewer.¹⁵ Therefore, embedded logistics must be shaken out of the conceptual domain and made a reality. A mission-based teeth-to-tail is essential; cutting corners or thinking it will come when required can create situations, as seen during the Russian advance.

India must re-look at our surprise and deception concepts. Run-of-the-mill activities will not achieve surprise on the battlefield as the use of technology has enabled near-persistent coverage of the battlefield, and every action can be picked. The deception plan has to be credible and executed at the highest level. Similarly, the IFF concept has to be revised. Using rear-facing lights on armoured vehicles for IFF will not suffice any longer. We must use electronic means and have the ability to know friendly forces on the battlefield management systems. We must invest in technology that supports achieving surprise and deceiving enemy sensors.

Another aspect that needs overhaul is the camouflage and concealment doctrine. The present capability of surveillance assets is far superior, and hiding a tank, armoured vehicle and artillery gun under a camouflage net made of cloth or in trees is akin to fooling ourselves. The vehicles must be coated with anti-thermal/

anti-radiation material from the factory itself. The capability must also be developed to defeat thermal or infrared signature-seeking assets. After suffering huge losses, Russia has started to employ thermal camouflage on its vehicles, and using a range of other modifications, tactics, techniques and procedures, significantly reducing the detectability of tanks at stand-off ranges.¹⁶ Furthermore, these measures have reduced the kill probability of a variety of anti-tank guided missiles at ranges beyond 1,400 m.¹⁷ The mobile phone has become a potential threat to the safety of own forces on the battlefield or in concentration areas. This aspect has been adequately proven during the ongoing Russia-Ukraine war. Hence, in the future, tactical commanders must be conscious of this aspect and put measures that do not result in adverse situations for their forces.

Mechanised forces work on sophisticated command and control systems to synchronise units' actions, ensuring the efficient execution of missions. Technological advancement has made this very system a lucrative target. Therefore, India must develop the capability to ensure the survivability of our structures. Simultaneously, own EW capabilities need to be considerably enhanced. In addition to EW assets being employed at the operational level, these have to be integrated at the tactical level within the permanent structure of the combined arms unit to enable integrated training and enhance combat effectiveness.

The Russia-Ukraine war has highlighted the impact of the technology-dominated urban environment on mechanised forces. The different approaches and continuous evolution of tactics by Russia and Ukraine have brought forth very important aspects. Firstly, innovative employment of tactics supported by new-generation technology can offset adversaries' qualitative and quantitative advantages. Secondly, the importance of tactical leaders being able to innovate and adapt to rapidly changing situations. Therefore, we need to enhance our urban warfare capability at the tactical level and revisit our urban warfare doctrine.

Conclusion

It is evident from the Russia-Ukraine conflict that the nature of warfare has changed. Innovative combined arms tactics, precision fires, fire ambushes, track-and-destroy operations, and the ability to control and target depth communication will pay rich dividends.

Therefore, the mindset of combat forces and supporting forces must change. In this context, the nation must holistically rethink the employment of mechanised forces, including the infantry, air force, helicopters, artillery, air defence, drones, and electronic warfare assets. Our geographical borders provide a unique conflict spectrum; therefore, India must develop robust integration spanning ground, air and deep inside enemy territory.

Additionally, the country has to accept that battles have to be fought by matching technology with technology and tactics with tactics; a poor man's choice will not yield the desired results or exact a heavy price for every success. The nation must acquire technology and make it available in response to adversaries fielding new technology on the battlefield. No amount of changes to tactics will provide us with the fluidity required in mechanised operations. Hence, investing in modernising equipment, enhancing its capabilities, and then revising tactics and doctrines is a compulsion.

Endnotes

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The State of War-Wounded Personnel in India: An Appraisal

Commander Arun Kumar Yadav[@]

Abstract

The paper elucidates the challenges faced by war-wounded personnel in India, focusing on their physical, psychological, and societal struggles post-injury. Despite their sacrifices, the paper highlights the inadequate recognition and support for these individuals, contrasting the attention given to those killed in action. Through qualitative and quantitative methods, it assesses the concerns of war-wounded personnel, revealing gaps in their rehabilitation and welfare. Issues such as lack of empathy, inadequate counselling, and medical negligence are discussed, along with recommendations for improvement. The paper suggests a holistic approach to rehabilitation, drawing from international models like the United States and the United Kingdom, emphasising physical and psychological support alongside constructive engagement. It proposes measures for career progression, financial assistance, and family support to ensure the well-being of war-wounded personnel. Furthermore, it advocates for the establishment of a comprehensive data bank to track and support these individuals effectively. Drawing inspiration from Maj Gen Ian Cardozo's remarkable journey, the conclusion emphasises the need for opportunities for wounded warriors to prove themselves, challenging existing norms and fostering

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a culture of inclusivity and support within the armed forces. Ultimately, the paper calls for a concerted effort to address the multifaceted challenges faced by war-wounded personnel, underscoring the imperative of providing them with dignity and support as they navigate life beyond injury.

Introduction

“While it takes strength to serve in the Armed Forces, it takes a different kind of strength to live a life beyond injury”.¹

Indian Armed Forces have fought four wars against Pakistan including limited operations in Kargil in 1999 and one war against China since Independence in 1947. In addition, the Indian Armed Forces went as Peacekeeping Force to Sri Lanka. Although the nation has not fought a war since the Kargil War of 1999, the forces, especially the Army have been involved, in major counter-insurgency and counter-terrorism operations in many parts of the country. During these operations, the Indian Armed Forces have suffered many casualties. There are nearly 40,000 war disabled personnel in our country, scattered in different parts of India and the number is constantly increasing.² Broadly, these casualties are of two types, ‘Killed in Action’ and ‘Wounded in Action’. Some of those ‘Wounded in Action’ become permanently disabled. While a few are invalided out of service, others are retained in the service.³

The Soldiers serve the nation selflessly. Captain Vikram Batra’s war Cry ‘Ye Dil Mange More’ and the famous line in Captain Manoj Pandey’s letter to his family which said, “If death strikes before I prove my blood, I swear, I will kill death”, has been reverberating in radio, TV, social media and the hearts of patriots. While national pride has been the primary reason why a soldier is willing to sacrifice their lives and limbs, but the understanding that the nation will look after their Next of Kins (NOKs), if they make the ultimate sacrifice on the battlefield or are maimed permanently, also plays a significant role. While due recognition is given to those ‘Killed in Action’ and their families, the war disabled are easily forgotten and consigned to a life of ‘Existence’.⁴

Aim of the Paper

The primary aim of the paper is to undertake research about the present state of war-wounded personnel in India, identify problems associated with their welfare and recommend feasible solutions for ensuring their well-being.

Layout of the Paper

In the beginning, the paper attempts to understand the concerns of war-wounded personnel and problems associated with their welfare. Various examples and instances are quoted to support the statements. To study and develop appraisal regarding state of war-wounded personnel in the country, a survey has been carried out among armed forces personnel, both serving and veterans. Analysis of the survey has been included in the paper. In the end, the paper attempts to present a road map for instituting measures towards ensuring welfare of war-wounded personnel.

Terminology

Rehabilitation.⁵ Rehabilitation is a process of assessment, treatment and management by which the individuals (and their families) are supported to achieve their maximum potential for physical, cognitive, social and psychological functions, participation in society and quality of living.

Physical Casualty.⁶ Physical casualties are those, which occur in non-operational or in operational areas when there is no actual fighting/action involved. Physical casualties consist of the following categories:

- Died or Killed.
- Seriously or dangerously ill.
- Wounded or injured (including self-inflicted).
- Missing, presumed dead.

Battle Casualty.⁷ Battle casualties are those casualties sustained in action against enemy forces or preparation/deployment for operations on land, sea or air. Casualties of this type consist of the following categories:

- Killed in action.
- Died of wounds or injuries (other than self-inflicted).

- Wounded or injured (other than self-inflicted).
- Missing, presumed dead.

Understanding Concerns of War-Wounded Soldiers

The methodology adopted, to understand concerns of war-wounded personnel, consists of both qualitative and quantitative methods. The qualitative method comprises interviews of war-wounded personnel whereas the research survey forms part of the quantitative method.

Qualitative Method. During the process of interviews, I came across an officer who on completion of ab-initio military training at Officers Training Academy, Chennai, joined an Infantry Regiment. The officer got married in six years of service and within a few months of marriage, he was deployed in counter-insurgency operations in the Northern Command. During one of the search and destroy operations, he sustained injuries from hundreds of shrapnel from a grenade which exploded in close vicinity. He was grievously wounded and was evacuated to the nearest Hospital. Through the streamlined medical board procedure, the officer was eventually downgraded to a permanent low medical category, S1H1A3P2E1. Since then, he has been surviving on Central Nervous System depressants and strong painkillers and has been trying to justify his retention in service by working harder than others.

The officer is a short-service officer and will be considered for permanent commission in a year. While undertaking his assigned mission with utmost pride, the officer has laid down probably everything, except his breath. However, analysis of events post injury poses various questions about his future:

- Being a short service officer, he is at fag end of his signed service tenure and would be considered for permanent commission along with his course shortly. What is the probability that the officer will be selected for permanent commission?
- If selected for permanent commission
 - Will he be considered for worthy assignments, courses and further promotions?

- Does the officer need to compete with others who are physically fit to prove his calibre or he will be given any concessions on account of his disability for further promotion?
- If not selected for permanent commission, considering his medical condition will he be able to establish himself in the civil streets? What has the organisation done to equip him for the 'After-Life' post-retirement?
- The shrapnel which pierced his groin has left him without the ability to have a normal sexual life. So, will he be able to lead a normal family life? What will be the source of motivation in his life both on personal and professional fronts?
- His medical condition has been worsening and new complications are developing. His physical and mental condition is likely to deteriorate faster with age and time which will increase his dependence on others. Is he an asset for the family or a liability? Will he be able to lead a life with self-respect?
- Last but not the least, what will be his financial entitlements on retirement? Is he eligible for a pension with 'Service', 'Disability' and 'War Injury' elements? Can any amount of financial support compensate for his loss?
- While this is about one wounded soldier, there are many whose condition is no better. For any organisation to take welfare measures for its employees, it is imperative to understand their concerns. A few of the concerns of War-wounded personnel include:
 - Dependence on others for menial things including routine activities.
 - Inability to support their family.
 - Feeling that they are a liability to the family.
 - Feeling that they have been forgotten by the people of their beloved organisation who are racing for career progression.

Quantitative Method. As part of the quantitative analysis method, a research questionnaire was circulated among war-wounded and other armed force personnel including those serving and veterans. The research analysis was mainly focused on exploring the following areas:

- To establish the level of awareness about the war-wounded among the serving personnel and veterans.
- To gauge the opinion of war-wounded personnel whether serving or veterans about various aspects including:
 - Retention in service post incurring injury.
 - Welfare measures of war-wounded personnel and their families.
 - Recognition of their sacrifices.
- Seek probable ways of improving the present state of war-wounded soldiers.

Data Analysis of Questionnaire. In furtherance to the questionnaire circulated, 202 responses were received from 60 war-wounded personnel (serving and veterans) and 142 others (serving and veterans). The questionnaire is placed at **Appendix A** and the analytical graphs are placed at **Appendix B**.

Based on the survey, following is *germane*:

- Respondents are of the opinion that war-wounded personnel are only partially looked after by the organisation.
- The survey indicates that more than half of the respondents feel that the career progression opportunities and options for those retained in service are not adequate.
- 28 out of 60 war-wounded respondents are of the opinion that justice has not been done by the organisation for their contribution while 16 feel that partial justice has been done.
- About 40 per cent of the respondents are of the opinion that the sacrifices of war-wounded personnel have been given due recognition while 20 per cent feel that the statement is not true. The remaining 40 per cent feel that the fact is partially correct.

- 30 per cent of respondents are of the opinion that there is a lack of empathy towards war-wounded personnel in services while 40 per cent feel partial empathy exists.

Organisational Issues

General Attitude.

- **General Attitude towards the Disabled : Sympathy versus Empathy.** Interactions with war-wounded personnel indicated that while there is enough sympathy in the organisation for those who continue in service but the factor of empathy is lacking. While superiors sympathise with their physical conditions, they tend to forget their limitations and treat them as a burden. For instance, on a few occasions, war-wounded with disabilities are considered as additional manpower and are deputed for temporary duties in lieu of others. On other occasions, they are compared with other disabled personnel with similar conditions. During interactions, the war-wounded personnel indicated that they seek empathy and not sympathy from their colleagues and superiors.
- **Lack of Awareness.** The awareness of the disabled person in various units of all three services is subjective to the level of interest shown by the seniors of the units. In most cases, the disabled personnel, including those serving, are not aware of their entitlements, which is a clear indicative of the lack of focus of their superiors on their welfare.

Inadequate Counselling Facilities

To start with, what arrangements are in place for helping a person, who has recently lost a body part or had a near-death experience, to come to terms with the situation they suddenly find themselves in? Are there adequate Counsellors whom these persons can talk to? Is there someone who can help them understand and rationalise their fears? Are Psychiatrist and the fear of a 'Form 10' an answer to everything? There is a vast difference in the professional capabilities and requirements of a Psychologist and a Psychiatrist.

A person with a disability has various concerns about his own future and his family. In most cases, he is not able to discuss his concerns with anyone. Therefore, counselling by a professional is considered essential in dealing with the situation. Interaction

with the disabled revealed that the state of counselling as part of treatment is either missing or inadequate. Also, it is imperative to state that while counselling of the individual is of prime importance, counselling of the family members in accepting the 'New Normal' is equally important.

Medical Issues

Special Immediate Care. There have been cases of medical negligence which have resulted in serious consequences. For instance, one of the officers posted along the 'Line of Control', after an Improvised Explosive Device blast, was admitted in one of the military hospitals with multiple splinters in one leg. Amputation was undertaken as last resort to arrest spread of infection. However, a detailed medical examination to ascertain the cause of his deteriorating health revealed presence of a splinter in another leg too. By now the infection had spread enough and required amputation of the other leg as well. The officer thus became a bilateral amputee because of medical negligence. While such cases of medical negligence are rare and can be attributed to circumstances, it is essential to lay particular emphasis on correct medical procedures.

Lifestyle and Lifestyle Related Diseases. Analysis of trends indicates that the cases of lower limb amputation tend to suffer from various infections of the residual limb and lifestyle related diseases. The sedentary lifestyle because of limited physical activity has resulted in increased probability of obesity and cardiac issues. These disabled personnel also tend to develop issues related to the kidneys and renal system. Therefore, there is a need to review their medical diagnosis periodically and any complication, which arises due to the initial injury, needs to be considered as a part of the Battle Casualty and the degree of disability should be revised at the time of Release Medical Board.

Way Ahead

Steps for Rehabilitation in Other Countries.

- **United States (US) Concept of Constructively Engaging Wounded.** US Armed forces are known to be exposing wounded soldiers to various Paralympic sports and games to keep them motivated by giving them a purpose in life.

- **United Kingdom (UK).**⁸ In UK, the Defence Medical Rehabilitation Centre (DMRC) has been treating Armed Forces patients who have sustained injury either during training and exercises or during active service. DMRC has recently collaborated with Nottingham University Hospital Trust under the Defence and National Rehabilitation Centre (NRC) Program. UK is also known to be integrating the Clinical and Academic space/facilities with the NRC. This integration is known to have brought many benefits:
 - Promoting innovation in rehabilitation, leading to new and improved solutions.
 - Reducing the time taken from the development of a service to its introduction into clinical practice.
 - Collaboration and learning, with academics and researchers hearing directly from patients and clinicians.

Holistic Approach

Towards quick recovery of the individuals, clinically as well as psychologically, a holistic approach needs to be adopted. Following aspects are to be looked at as part of the holistic approach:

- Providing high-quality medical treatment.
- Physical rehabilitation.
- Psychological rehabilitation including restoring their high morale.
- Constructive Engagement of war-wounded Personnel.

Physical Rehabilitation. The aim of Rehabilitation is to enable those war-wounded who have been invalidated out from services and are finding it difficult to survive in society in living a life with dignity. Rehabilitation needs to be given to wounded personnel at the right time and in a specialised way to give them back their lives after the setback of serious injury or illness. Presently, there are three rehabilitation centres, including two Paraplegic Rehabilitation Centres and one Artificial limb centre. The Paraplegic Rehabilitation Centres at Khadki and Mohali cater for veterans only while the Artificial limb centre at Pune caters for all including

civilians. New rehabilitation centres, one each in the North East Region and Southern region, need to be established in line with NRC, UK. The aims of the rehabilitation centre should be to:

- Provide rehabilitation to the war-wounded and engage them constructively.
- To bring research and innovation in the field of prosthetics and support gears for the disabled.
- To provide education and training towards making them independent.

Assistance from NGOs. These days many services have come up with the idea of helping old age personnel with their daily needs based on minimum subscription model. For example, recently an application known as 'GoodFellows' has been launched which is backed by legendary businessman Ratan Tata. It employs young, educated graduates to create inter-generation friendships and to reduce the loneliness of the elderly. Services on similar lines can be launched through collaboration with NGOs to assist veteran war-wounded soldiers in meeting their day-to-day needs and assist them in dealing with their loneliness.

Psychological Rehabilitation. Psychological rehabilitation of the individual is equally important towards enabling him in accepting his physical state and looking at the future with a positive outlook. For psychological rehabilitation of war-wounded personnel, the counsellors will play an important role towards enabling individuals and their families in dealing with the situation. The following aspects of psychological rehabilitation are considered important:

Sense of Belonging in the Organisation. Those who tend to go and face the enemy in hostile conditions are ones who have a deep sense of belonging for his/ her unit, service and nation. It is the responsibility of the organisation to respond with a similar sense of nurturing towards these individuals when they are going through tough times.

- **Motivation.** A motivated individual can fight all odds of life and can come out of toughest of the situations. It is the responsibility of the organisation to give their life a purpose and keep them motivated.

- **Research Strategy.** For better rehabilitation, there is a requirement to develop strategy towards integrating rehabilitation centres with the academics/researchers and collaborating with National hospitals like AIMS in line with UK.⁹ The aims of the strategy are as follows:

- Establish a national centre of excellence for research in rehabilitation.
- Strengthen the national and international rehabilitation research community.
- Ensuring high-quality medical facilities at the rehabilitation centres.

Constructive Engagement. Activities to engage wounded soldiers constructively are expected to solve most of the issues of motivation and psychological rehabilitation. Pursuing these activities would help in:

- Keeping the individual engaged and distracting his attention from problems.
- Enable him to look forward to life with a hope.
- Providing a hope of doing good in life again.
- Enables him in fighting the odds of life in a better way.
- Increase social interactions which in turn acts as natural counselling.

The Following means of constructive engagement of the wounded soldiers may be considered:

- **Para Sports.** It is recommended that once the medical condition of the individual has been stabilised, the individual may be exposed to sports and encouraged to participate in Para Sports. While the Army has established the Army Paralympic Node and has a coherent Sports Policy in place, the Navy and Air Force are yet to develop such nodes.
- **Skill Development.** It is imperative that thought be given to skilling the war-wounded individuals. Queen Mary Technical Institute (QMTI), Pune trains differently-abled ex-servicemen who have been rendered unfit for the service in armed forces

due to medical conditions and those in service who are under prolonged medical treatment.¹⁰ However, this is the only institute working on the skill development of disabled soldiers dedicatedly. Setting up more skill development centres at regional/state levels in line with QMTI, Pune is highly recommended.

Recommendations by War-Wounded

The survey questionnaire revealed that the war-wounded personnel are of the opinion that their sacrifices have not been recognised. Also, they expressed concerns about limited career progression prospects for war-wounded personnel who continue in service. Towards addressing these concerns, the following measures may be instituted:

- The system should be amended to ensure easier absorption into Non-Combatant branches. Upon absorption, the individual should have options for career progression equal to others in these branches.
- The war-wounded should be considered for competing for prized appointments like Diplomatic assignments abroad.
- On superannuation, they must be considered at par with those invalided out of service in terms of financial aspects.

On many occasions, wounded personnel with grave injuries are invalidated out of service irrespective of the duration of their service tenure. It is difficult for these personnel to establish themselves in the civil world considering physical limitations. Towards enabling them for a second career and providing sufficient career opportunities, the following measures may be instituted:

- Reservation in other government sector jobs including civil services towards ensuring equal career progression.
- Personality development and other career-oriented courses at recognised institutions like IIMs/IITs/NITs to help them in getting good jobs based on their qualification post leaving services.

When a person is wounded during a conflict, the family of the wounded suffer psychologically as much as the individual. Towards asserting the will of the nation in looking after the family

members of war-wounded, the following measures may be considered for projection by the services:

- Reservation for wards/spouses of war-wounded in government jobs based on their educational qualification.
- Reservations for wards/spouses of war-wounded personnel in higher education.

Data Bank of War-Wounded

Gen Bipin Rawat while speaking to media persons on the sidelines of the convocation ceremony of Military College of Electronics and Mechanical Engineering on 14 Dec 18 said, "There are two different categories of disabled jawans. One, those who need temporary support and those whose families also were affected by the permanent disability of a jawan. We will prepare the database on the type and size of the disability and will come up with the policy to assist them accordingly".¹¹

The above statement is indicative of the fact that the services lack a system of maintaining a data bank of war-wounded. Since 2018, efforts have been put in to build up a database. With the recent establishment of Veterans' Directorates, some headway has been made to reach out to them after retirement. However, such services are still in the shadows.

Preparation of a comprehensive Data bank of war-wounded personnel (serving and veterans) involves two steps:

- Collation and verification of relevant details
- Regular updation of Data collected.

Data Bank for Serving War-Wounded Personnel

Adjutant General's Branch (AG's branch)/Personnel branches of respective services are responsible for maintaining Data bank of all officers including war-wounded. The regimental centres for Junior Commissioned Officers (JCO) and Other Ranks (OR) in Indian Army, Commodore Bureau of Sailors (CABS) for sailors in Indian Navy is responsible for maintaining Data Bank of all soldiers, sailors and airmen.

The updated details can be viewed on Officers Automated and Structured Information System by officers and Army Data Network by the ORs. On few occasions, it has been observed that the details are not being updated on a regular basis and it has become responsibility of the individual only to send reminders to the updating authorities. It is therefore recommended that the agencies maintaining Data Bank including AGs/Personnel Branch and Regimental Centres/CABS may be held accountable.

Data Bank for War-Wounded Veterans

A dedicated portal named Retired Officers Digital Records Archive (RODRA) is prevalent for accessing details by the veteran officers through which war-wounded officers can view their details and also raise objections in case of any anomaly. However, there is not such online portal for veteran soldiers, which leaves them with the rudimentary way of raising complaints. It is recommended that an online portal in line with RODRA be devised towards increasing awareness of the veteran soldiers (JCOs and ORs) and as a means of raising issues about incorrect details.

Integration of AG's Branch/Regimental Centres with War Wounded Foundation (WWF) and other NGO's. War Wounded Foundation has been set up as an autonomous organisation to assist war-wounded personnel in leading useful and productive lives and becoming financially independent.¹² It is therefore recommended that the branches/agencies maintaining Data Bank in services be integrated with WWF and similar NGO's, which are looking into the welfare of veteran war-wounded personnel, so as to share details of personnel invalidated from services and those retiring with battle casualties. This would enable these autonomous bodies to reach out to those war-wounded personnel in need.

Conclusion

"I didn't join the Army to be chained to a desk," he says.

"I was determined that my war disability would not stand in the way of commanding my men".¹³

Maj Gen Ian Cardozo clambered over icy mountains with his prosthetic limb, outran his able-bodied officers and went on to become the first war-disabled Indian Army officer to command a battalion, brigade and a division.¹⁴ The officer had to prove himself

before being considered for such appointments. His incident brings to fore two important questions:

- After one has proved himself on the actual battlefield, is there a requirement to prove oneself under simulated conditions?
- Would we have more Ian Cardozos, Oberois or Joshis today if we give opportunities to wounded warriors to prove themselves?

The organisation needs to accept the fact that the problem is prevalent and the present state of affairs needs to be changed. One of the major problem areas that need to be addressed is enabling war-wounded in living their lives with dignity. In an attempt to identify problem areas, the paper could locate a few and has recommended solutions. However, there are many more that need to be addressed in addition.

Appendix A
(Refers to Para 13)

THE QUESTIONNAIRE

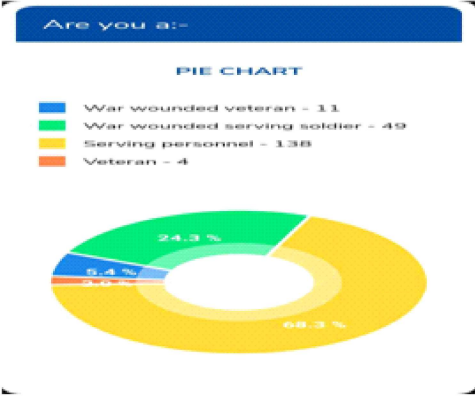


Question No.	Question	Options	Remarks
1.	Are you a:	(a) War-wounded veteran (b) War-wounded serving soldier (c) Serving personnel (d) Veteran	Mandatory Question
2.	In your opinion, do you think war-wounded are looked after enough by the organisation after the injury?	(a) Yes (b) No (c) Partially (d) Don't Know	Mandatory Question
3.	Do you think war-wounded have fair career opportunity/options in services?	(a) Yes (b) No (c) Don't Know	Mandatory Question
4.	If you have been retained in service, were you given an option to continue or be invalidated out?	(a) Yes (b) No	Optional Question
5.	If retained, do you think justice has been done to you for your contribution to the organisation?	(a) Yes (b) No (c) Partially	Optional Question
6.	Do you think war-wounded have been given due recognition of their sacrifices?	(a) Yes (b) No (c) Partially (d) Don't Know	Mandatory Question
7.	Do you think, NOKs of war-wounded have been looked after well after your injury?	(a) Yes (b) No (c) Partially (d) Don't Know	Mandatory Question
8.	Given an option, do you think war-wounded who have got permanent medical category would like to continue in service or leave service to start a new career?	(a) Would like to continue in service (b) Would like to leave service	Mandatory Question



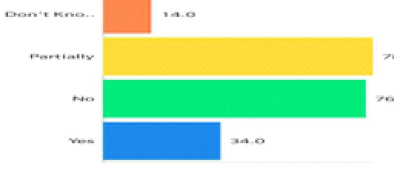
Question No.	Question	Options	Remarks
9.	Do you think there should be a difference between operational and Battle Casualty?	(a) Yes (b) No	Mandatory Question
10.	Do you think there is enough empathy in services towards war-wounded?	(a) Yes (b) No (c) Partially (d) Don't Know	Mandatory Question
11.	Do you think establishment of veterans' directorates by services has helped in making a headway to reach out to war veterans?	(a) Yes (b) No (c) Partially (d) Don't Know	Mandatory Question
12.	In your opinion, what changes could be made to improve the welfare measures of war-wounded/disabled soldiers? Mention atleast 2 points.	Subjective Question	Optional Question


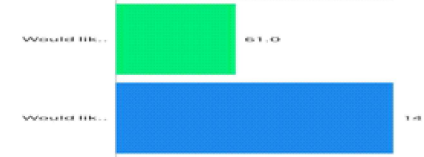
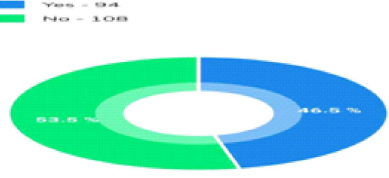
Appendix B

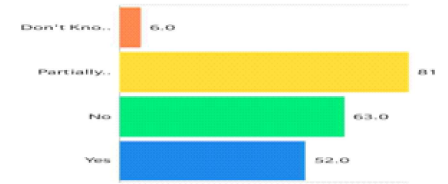
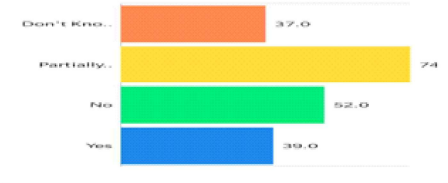
(Refers to Para 13)

ANALYTICAL GRAPHS OF QUESTIONNAIRE

Ser	Question	Response															
1.	Are you a:	 <p>Are you a:-</p> <p>PIE CHART</p> <ul style="list-style-type: none"> War wounded veteran - 11 War wounded serving soldier - 49 Serving personnel - 138 Veteran - 4 <table border="1"> <caption>Data for Pie Chart</caption> <thead> <tr> <th>Category</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>War wounded veteran</td> <td>11</td> <td>5.4%</td> </tr> <tr> <td>War wounded serving soldier</td> <td>49</td> <td>24.3%</td> </tr> <tr> <td>Serving personnel</td> <td>138</td> <td>68.3%</td> </tr> <tr> <td>Veteran</td> <td>4</td> <td>2.0%</td> </tr> </tbody> </table>	Category	Count	Percentage	War wounded veteran	11	5.4%	War wounded serving soldier	49	24.3%	Serving personnel	138	68.3%	Veteran	4	2.0%
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2.	In your opinion, do you think war-wounded are looked after enough by the organisation after the injury?	 <p>In your opinion, do you think war wounded are looked after enough by the organisation after the injury?</p> <p>BAR CHART</p> <table border="1"> <caption>Data for Bar Chart</caption> <thead> <tr> <th>Response</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>23.0</td> </tr> <tr> <td>Partially</td> <td>94</td> </tr> <tr> <td>No</td> <td>62.0</td> </tr> <tr> <td>Don't Know</td> <td>23.0</td> </tr> </tbody> </table>	Response	Count	Yes	23.0	Partially	94	No	62.0	Don't Know	23.0					
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5.	If retained, do you think justice has been done to you for your contribution to the organisation?	<p data-bbox="678 830 1115 905">If retained, do you think justice has been done to you for your contribution to the organisation?</p> <p data-bbox="825 926 968 942">BAR CHART</p>  <table border="1" data-bbox="711 971 1100 1147"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Partially..</td> <td>57</td> </tr> <tr> <td>No</td> <td>48.0</td> </tr> <tr> <td>Yes</td> <td>55.1</td> </tr> </tbody> </table>	Response	Percentage	Partially..	57	No	48.0	Yes	55.1		
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6.	Do you think war-wounded have been given due recognition of their sacrifices?	<p data-bbox="678 1280 1115 1355">Do you think war-wounded have been given due recognition of their sacrifices?</p> <p data-bbox="825 1375 968 1392">BAR CHART</p>  <table border="1" data-bbox="711 1421 1100 1597"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Don't Kno..</td> <td>14.0</td> </tr> <tr> <td>Partially</td> <td>78</td> </tr> <tr> <td>No</td> <td>76</td> </tr> <tr> <td>Yes</td> <td>34.0</td> </tr> </tbody> </table>	Response	Percentage	Don't Kno..	14.0	Partially	78	No	76	Yes	34.0
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7.	Do you think, NOKs of war-wounded have been looked after well after your injury?	<p data-bbox="676 375 1125 447">Do you think, NOKs of war wounded have been looked after well post injury?</p> <p data-bbox="825 468 976 488">BAR CHART</p>  <table border="1" data-bbox="691 509 1110 706"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Don't Know...</td> <td>27.0</td> </tr> <tr> <td>Partially...</td> <td>86</td> </tr> <tr> <td>No</td> <td>77.0</td> </tr> <tr> <td>Yes</td> <td>12.0</td> </tr> </tbody> </table>	Response	Percentage	Don't Know...	27.0	Partially...	86	No	77.0	Yes	12.0
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8.	Given an option, do you think war-wounded who have got permanent medical category would like to continue in service or leave service to start a new career?	<p data-bbox="676 820 1125 913">Given an option, do you think war wounded who have got permanent medical category would like to continue in service or leave service to start a new career?</p> <p data-bbox="825 934 976 955">BAR CHART</p>  <table border="1" data-bbox="691 975 1110 1131"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Would like...</td> <td>61.0</td> </tr> <tr> <td>Would like...</td> <td>14</td> </tr> </tbody> </table>	Response	Percentage	Would like...	61.0	Would like...	14				
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9.	Do you think there should be a difference between operational and Battle Casualty?	<p data-bbox="676 1276 1125 1348">Do you think there should be a difference between Operational Casualty & Battle Casualty?</p> <p data-bbox="833 1359 962 1379">PIE CHART</p>  <table border="1" data-bbox="705 1390 1090 1566"> <thead> <tr> <th>Response</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>94</td> <td>46.9 %</td> </tr> <tr> <td>No</td> <td>108</td> <td>53.6 %</td> </tr> </tbody> </table>	Response	Count	Percentage	Yes	94	46.9 %	No	108	53.6 %	
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10.	Do you think there is enough empathy in services towards war-wounded?	<p data-bbox="672 375 1115 451">Do you think there is enough empathy in services towards the war wounded?</p> <p data-bbox="822 468 965 484">BAR CHART</p>  <table border="1" data-bbox="672 509 1115 692"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Don't Know</td> <td>6.0</td> </tr> <tr> <td>Partially</td> <td>81</td> </tr> <tr> <td>No</td> <td>63.0</td> </tr> <tr> <td>Yes</td> <td>52.0</td> </tr> </tbody> </table>	Response	Percentage	Don't Know	6.0	Partially	81	No	63.0	Yes	52.0
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11.	Do you think establishment of veterans' directorates by services has helped in making a headway to reach out to war veterans?	<p data-bbox="672 783 1115 872">Do you think establishment of veterans' directorates by services has helped in making a headway to reach out to war wounded?</p> <p data-bbox="822 893 965 909">BAR CHART</p>  <table border="1" data-bbox="672 934 1115 1116"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Don't Know</td> <td>37.0</td> </tr> <tr> <td>Partially</td> <td>74</td> </tr> <tr> <td>No</td> <td>52.0</td> </tr> <tr> <td>Yes</td> <td>39.0</td> </tr> </tbody> </table>	Response	Percentage	Don't Know	37.0	Partially	74	No	52.0	Yes	39.0
Response	Percentage											
Don't Know	37.0											
Partially	74											
No	52.0											
Yes	39.0											

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Review Articles and Book Reviews

The Dragon's Bite: Strategic Continuum and Chinese PLA'S Evolving Fire and Teeth

Major General Rajiv Narayanan

President Xi Jinping's elevation as the General Secretary of the Communist Party of China (CPC) is often characterised especially, in the United States (US) and Europe, for his aggressive style and the narrative of being the sole leader responsible for China's unprecedented rise. This notion is often hyped, because there has been a strategic continuum since the time of erstwhile President Deng Xiao Ping, who laid the foundation, to be followed by subsequent leaders. This book is based on the hypothesis that there is a strategic continuum to the 'Grand Strategy' of China, through the writings of Dr Sun Yat Sen and Deng Xiao Ping. The essence of the strategy is narrated by giving the simile of a dragon, just as the dragon never bites first but destroys its prey by fire and then, gorges the remnants. Similarly, the CPC first weakens/destroys her targets internally, before taking them in their fold. This strategy is evident in the political and geoeconomic squeeze of target countries by China through the destruction of their Comprehensive National Power (CNP), thus, achieving the goals through what Sun Tzu called 'Win without Fighting'. Chinese believe that the 'Grand Strategy' leads to 'Military Strategy' and which in turn results in the concomitant tasking of the Peoples' Liberation Army (PLA). This necessitates capability development of PLA, hence, there is a process of modernisation, reorganisation, and restructuring. Thus, this book tries to analyse all aspects of the PLA including, its evolution, current status and likely future trajectory.

The book has three parts with nine chapters. The first part delves on the evolution of China's military, its strategy and PLA's doctrines. The first chapter of Part I narrates the trajectory of the evolution of the PLA, from its early years as a 'Rag-Tag Militia',

The Dragon's Bite: Strategic Continuum and Chinese PLA'S Evolving Fire and Teeth by Major General Rajiv Narayanan; Lancer Publisher and Distributor, 2023; Page 226; Price Rs 995; ISBN -10:81-7062-347-2

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to the current modernised sword arm of the CPC. The historical rise of the Red Army under Mao Zedong and the quote 'Political power grows out of the barrel of the gun' highlights the role of the military 'To chiefly serve the political end', which is pertinent even today. Post-World War II the Red Army was renamed as the PLA and the author then gives a historical narration of PLA under Mao's era. The second chapter deals with the consolidation of the strategies, highlighting the strategic continuum from Dr Sun Yat Sen to Hu Jintao. This chapter highlights the Chinese concept of CNP with its four pillars namely, economy, diplomacy, military, and finally the human index being the most important. Further, these were divided into subsystems namely 'Hard power, soft power, coordinated and environmental indexes'. Other significant concepts like 'Mandate from Heaven', the defining of 'Middle Kingdom' into five geographical zones, and the Chinese 'Shadow Institutions' are an interesting read giving a peep into the Chinese mindset. The third chapter in this part deals with the evolving PLA doctrinal and strategic precepts and modernisation trends. This chapter highlights some important concepts like the various phases of the 'War Zone Campaign' (WZC), the five pillars on which the WZC doctrine rests. namely, uninterrupted buildup of troops, long range vectors [missiles, rockets, Unmanned Combat Aerial Vehicle (UCAV) etc.], Anti-Access Area Denial to gain tactical and operational superiority, maritime and aerospace domination, and unrestricted warfare. It further delves into phases of China's 'Offshore Defence/Far Seas' naval strategy, the evolution of doctrine and strategy of PLA Air Force (PLAAF) and China's Second Artillery Corps, the current PLA Rocket Force. The author also highlights the 'Three Warfare' and the 'Psychological Operations' through a systematic buildup of narratives by utilising the psychological, media and legal aspects. This chapter also brings out the 'Six Combat Concepts' where significant focus is given on the long-range vectors and the unmanned aerial systems, the aspect of militarisation of space, kinetic information warfare, as also cyber warfare. China is known for its revolution in military technology hence the author has also delved into the domain of direct energy weapon and artificial intelligence and robotics.

The second part delves in detail about China's grand strategy, the military's reorganization and restructuring of combat arms and combat and service support structures. Chapter 4 of Part II describes the 'Grand Strategy and PLA Under Xi's Era'. Chinese

scholars have often spoken about overcoming 100 years of humiliation alluding to 'Opium War' and the subjugation during the Japanese war. The main theme of XI's strategy is to reestablish the 'Middle Kingdom'. According to the author the current push is to establish a 'Unipolar Asia' under China and have a 'China Dream' and the great rejuvenation of the nation. As China's CNP has risen so also its core interest have expanded and the role of PLA extended. China's White Paper from 2015 to 2019 amply highlight this aspect, as also the changes in China's military aspirations. Hence, Chapter Five appropriately highlights the 'PLA Reorganisation and Restructuring of Combat Arms'. The chapter starts with the reorganisation of the decision-making wing, the structural reforms of Central Military Commission (CMC). The changes include the creation of four General Departments and the four Headquarters. The chapter also highlights the structure of Army level units of PLA, the PLA Ground Force, and People's Armed Police (PAP). Further, China is not only a leading naval power but is also a leading global maritime power. It is the largest ship builder in the world and spends billions in expanding and acquiring ports. Hence, this chapter amply highlights the Chinese naval assets. PLA Navy's aim through 2035 is to have six aircraft, expand nuclear submarines, create maritime corps, etc. The chapter also describes the role of China's Coast Guard which is often referred to as the second navy as also the role of Maritime Police Contingent of PAP and People's Armed Forces Maritime Militia. the latter, being the third navy and the first line of defence for claiming shoals and islands in Western Pacific Ocean and the primary arm for China's 'Grey Zone' maritime operations. This chapter ends with highlighting the changes in PLAAF. The structural changes as also the thrust towards developing 4th Generation Plus aircraft and working towards 5th Generation Stealth Fighters. Focus on developing UCAVs, airborne warning and control systems, hypersonic glide vehicles, air defence systems etc. The sixth chapter deals with the 'PLA Restructuring of Combat and Service Support Structures'. This chapter discusses the PLA Rocket Force. China's 'No First Use' nuclear doctrine, and the conditions for lowering of nuclear coercion under four eventualities, its credible minimum deterrence theory, the counter strike posture and finally the survivability of China's nuclear force. It delves on modernisation of the Rocket Force as also describes the structure of its base. It further explains in detail China's Strategic Support Force including

China's Network Systems Department. These two are often referred as 'Information Umbrella' for the PLA. The chapter ends with a brief account of China's Joint Command and Control and Logistics Centre and the key drivers for the reorganisation, reflecting the desire to strengthen the PLA 's integrating Joint Operational Capabilities.

The last part of the book deals with 'PLA's Likely Trajectories, Way Ahead for India, US and the Rest', and the Conclusion. Chapter seven deals with 'Future Trajectory of China'. The author feels that PLA still has a long way to go, and its capabilities are overstated. Though China has made progress in modernisation and capability development but it's still a work in progress. Some of the Chinese aims highlighted consist of, developing continental, maritime and aerospace superiority/dominance, degrade aerospace defence assets of neighbouring countries, persistent situational awareness, disrupt information and decision-making process of others etc. Thus, it aims to follow the path of dragon whereby it wants to control certain nations by weakening the CNP of the target countries with asymmetric means like unrestricted warfare and belt and road initiative. But according to the author this strategy will work only with weak nations and will fail against strong contemporaries. This is mainly due to certain shortcomings visible, like having conscription and contractual soldiers, centralised autocratic control of PLA where Service Chiefs no longer find space in CMC, may lead to errors in strategic decision making, slow pace of modernisation of weapons and equipment, information regarding operational logistics system that would follow up to and within tactical battle area is vague, etc. Finally, the author crystal gazes and predicts certain trajectories for all the four services. The penultimate chapter deals with 'Way Ahead for India', where the aim for China is to curb India's rise. He describes various stages of conflict and some interesting scenarios. He also recommends a multi-domain strategy and a concerted push for self-reliance under the banner of '*Atmanirbhar Bharat*' (Self-Reliant India). He also discussed Indian security architecture and integrated military warfare and integrated force structure. In the last chapter, 'Way Ahead for US and Rest' author highlights China's global perspective and a three-way option for US, West and Russia to address the Chinese challenge.

In conclusion, the book is a repository of information, starting from history, strategy, doctrine to force structure. It is helpful to both military scholars and academicians, as well as students, due to its wide coverage of subject- from PLA's force structure to the modernisation trends, as also the future trajectories. The relevant information is given in a concise and lucid manner. The systematic analysis through charts and tables is visually appealing. The clarity of thought is apparent due to the author's knowledge on the subject. The chapter on 'Way Ahead for India' will specially help Indian scholars and policy makers in charting a proactive strategy, for bridging the gap between the two countries. The book, thus, is an essential read for all those scholars who would like to understand and watch China.

Dr Roshan Khanijo

Camouflaged: Forgotten Stories from Battlefields

Probal Dasgupta

Introduction

Probal Dasgupta's first book was *Watershed 1967: India's Forgotten Victory Over China* gave rare granularity into the clashes that were central to India regaining control of strategically significant border areas in Sikkim, his latest offering 'Camouflaged' is another masterpiece in which he has now brought to the fore ten forgotten stories from battlefields in which Indian soldiers have proved themselves across the globe and across times.

The expanse of the book is vast as the stories which span over a century from World War I to the 26/11 terrorist strike in Mumbai. From the ground to the air, battlefields far and near, dense jungles to desolate mountains and to densely populated urban areas, the setting of each tale varies but what stands out is the character of these ordinary men who delivered extraordinary results when confronted with extreme challenges. The book also gives a rare insight into the unique camaraderie and ethos of units and family traditions of military service and more importantly covers an aspect that is not written about often, the trauma faced by their families.

About The Book

The book comprises of three parts with 10 chapters. Part I begins with the memoirs of World War I. Arthur Conan Doyle bowling off-spin in Eastbourne to a stylish turbaned Indian batsman is an unusual way to start a story about war and glory. From the grassy fields of England to the skies above France and air combat 'Sultans of the Skies' is an incredible story in many ways. Hardit Malik, who was studying in Oxford when the First World War broke out, was rejected by the British Air Force. He went on to be an ambulance driver in France and applied for the French Air Force,

Camouflaged: Forgotten Stories from Battlefields. Author: Probal DasGupta. Edition: 2023. Media: Paper Back. ISBN: 9789353453459. JBA Book Code: 274730; Price ₹ 699.00

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who accepted him. His tutor in Oxford then shot off a letter to General Henderson the head of the Royal Flying Corps (RFC) and soon he joined the RFC and was even given a 'Special helmet to fit over his turban'. He went on to join 28th Squadron and 'Determined to stamp his country's presence in the war despite officially representing Britain', had India painted on the side of his aircraft. He became an ace pilot but ended the war with a bullet lodged in his thigh while engaging in an air duel with Paul Strahle, a legendary German pilot. He later went on to become India's Ambassador to Canada and France.

Laddie Roy the other pilot covered in this story also came from a privileged background and did his schooling in England, lying about his age when he joined the RFC, he was told he had to 'Survive and Fight and then Survive Again'. He did survive his first crash and after he recuperated, he 'Persuaded the medics to pass him fit for flying duties'. He became a 'War Veteran and Teen Sensation' and took down nine German planes between 09 and 19 Jul 1918. Unfortunately, on 22 Jul 1918, the prodigy was shot down in a skirmish, but this was after taking down two German aircraft. He was a trailblazer in combat while flying in India and in 1998 a stamp was released in his honour.

'Message in a Battle' is the story of Gobind Singh of 2nd LANCERS, a renowned Cavalry Regiment, who was awarded the Victoria Cross in the Battle of Cambrai in 1917. Belonging to Damoi in Nagaur District of Rajasthan, he was fearless. This was the battle where tanks were introduced on the battlefield for the first time but after they had achieved the breakthrough, additional troops in the form of Infantry and Cavalry were required to follow on and capture the ground. Indian soldiers of the Regiment with lances had charged ferociously at German Machine Guns; 'Raw courage against steel'. Though they had been successful they were soon surrounded by Germans and an urgent message needed to be sent to the Brigade Headquarters. Sowar Jot Ram and Lance Daffadar Gobind Singh volunteered. Losing his horse, dodging bullets, and feigning death he displayed unshakeable composure and resilience, he repeated this feat thrice and this act of 'Conspicuous Bravery' thwarted a major enemy breakthrough and was awarded the Victoria Cross. His son and grandson went on to serve in Second Lancers.

The story of Chanan Singh Dhillon; 'Three Lives in War'; can be summed up in the words; 'Believe it or not'. A farmer's son from Punjab who was keen to join the Army he fell short of English proficiency to join as an officer. Nevertheless, he joined as a soldier and set off to fight World War II with his Engineer Regiment initially in Basra, Iraq and later in North Africa where he became a Prisoner of War (PoW). This was in Jun 1942 a week before he was to return to India as he had been selected as an officer. Facing an Italian execution squad for complaining against the inhuman work conditions, he was saved by the Germans. While being transported to a PoW Camp in Italy their ship was hit by a British submarine ironically killing many British prisoners. He survived the boiling waters as SS Loretto went down in the Tyrrhenian Sea by clinging to a plank of wood. Later, while in Stalag 12, a PoW camp in Limburg Germany he was nearly killed by an allied air attack. He returned and became an officer and his children then helped put together the story of his remarkable ordeal based on his diary and letters which were written in Punjabi. Ironically, it all started the day he received the letter offering him the opportunity of his dreams.

The second part of the book recounts the tales of soldiers whose deeds in safeguarding India's borders showcased the intense pride of a nascent, sovereign nation. The legendary tale of Colonel Chhewang Rinchen has been recounted in great detail bringing the enormity of his valour, the strength of his character and the adversity of the terrain and weather conditions where he fought. He has participated in all of India's Wars and been recognised for his extraordinary bravery and leadership having been awarded the Maha Vir Chakra twice. In 1971, he was instrumental in capturing a portion of Baltistan which resulted in the shifting of the line of Control. The villagers in this area though Muslims, had reminisced about life before Pakistani occupation in 1948 and felt a greater kinship with their Ladakhi brethren. 'Today the legend of Stak lives on undefeated'.

'The Rise and fall of 1962' is the story of Haripal Kaushik who fought the Chinese in Tongpen La, leading his subunit of 1 SIKH in resolute defence applying his tactical acumen on the battlefield in Oct 1962. He was fortunate to breakthrough the Chinese onslaught and returned weeks later absolutely bedraggled.

He was shattered both physically and psychologically but fought back due to the faith of his Commanding Officer, Lieutenant Colonel Karnail Singh Sidhu, and amazingly went on to play in the Olympics again winning his second Gold Medal in Hockey. A Vir Chakra for his 'Remarkable Bravery' and Arjuna Awardee Colonel Haripal Kaushik, known for his speed and stickwork, was indeed an extraordinary human being.

'Top Guns of Boyra' is an extraordinary narration which brings out the character of young men, the spirit of a unit and a sense of achievement as well as ethical soldiers' conduct on the battlefield. Flying Officers Don Lazurus, Ganapathy, Soares and Massey of 22 Squadron flying Gnats were successful in destroying two Pakistani Sabres over Garibpur in Nov 1971. They displayed extraordinary flying skills and became legends 'Before they touched down'. One of the Pakistani pilots was Parvaiz Mehdi Qureshi who was captured by 4 SIKH and saved from being beaten up by their Adjutant Captain (later Lieutenant General) HS Panag. Qureshi, a contemporary of General Musharraf went on to become the Pakistani Air Chief, had advised Prime Minister Nawaz Sharif against using air power during the Kargil war as it would have led to retaliatory escalatory measures. Many years later Don Lazurus, then settled in Coonoor, received a reply to his congratulatory letter to Qureshi in which he complimented him for the fight in Boyra.

Part III of the book covers the 'Modern Era'- the Kargil War, insurgency and terrorism. Complex modern-day issues. Some stories are still classified in the sense that the names of the people cannot be revealed but their actions and reactions are fact and not fiction. How do you deal with a militant who admits he has been led astray, wants to make amends and is willing to help you? How do families support each other in times of crisis knowing fully well that their husbands could be the next victims?

'The Warriors Code of Courage' brings out the spirit, training and ethos of 21 Special Forces and the manner in which they operate. There are two actions of one of their Teams which have been covered one in Assam and the other in Jammu and Kashmir. The manner in which an encounter takes place and the interpersonal relations within the team, which is one of the closest relationships with a buddy willingly sacrificing his life for his

colleague, brings out the character of these men where despite being seriously wounded their thoughts lie only on successfully completing their mission. The undaunted courage of Maj Deepinder Singh Sengar who suffered serious bullet injuries in both operations and his colleague Saurabh Singh Shekawat who evacuated him both times and is one of the most highly decorated officers, reflects the rare bonding and loyalty and fills one with pride.

Conclusion

The dilemmas men face in battling these insurgencies, the effect of intense operations on soldiers, society and people living in insurgency prone areas as well as on the families of those combating it are vividly covered. There is no doubt that we need to preserve the perspectives of the protagonists so that they do not get obliterated by the passage of time. Books like this need to be read as they not only serve as an inspiration for the future generations but also build a sense of patriotism and pride in our Armed Forces.

Tales of soldiers, their courage and commitment are inspiring to say the least. Military heroism displayed in the face of extreme adversity wherein individuals take life threatening actions to uphold the honour of their units and the nation totally disregarding their own safety are rare acts of bravery, dedication, and commitment whose tale needs to be told to a wider audience. People need to be made aware of the sacrifices they and their families have made for the nation.

While the legacy of these brave men is well recorded in their units and by their families, but the candid and intuitive way Probal has weaved these tales by infusing life into them needs to be admired. It is truly a book that is difficult to put down. Probal's gripping narrative brilliantly matched by his eloquent prose while revealing what was hidden under 'Camouflage' needs to be admired.

Major General Jagatbir Singh, VSM (Retd)

The Legacy of Shivaji The Great - Military Strategist, Naval Supremacy and the Maratha Empire, By Colonel Anil Athale; (Mumbai: Indus Source Books, 2023); Pages: 266; Price 599/-; ISBN: 978-93-85509-69-8.

The area of research for this book began under the General Palit Military History fellowship of the Manohar Parrikar Institute of Defence Studies and Analyses, New Delhi. The question posed by late General Palit, a military historian himself, was “Why did the Marathas, who fought the Mughals so valiantly, succumb to the British so tamely? Or is it that the true history of that struggle has been suppressed by the British?”

This book, in addition to exploring the Maratha mystique, attempts to answer the question posed by the late General. Writings by Shivaji or the respective generals deftly woven from the author’s pen have shed light on a variety of events, plans, and tactical moves, as well as the leaders’ thought processes.

The painstaking investigation uncovers a story that the British deliberately ignored. It is admirable that the author is committed to revealing the obscure parts of Indian history, since it provides readers with a new understanding of the power struggles of that pivotal era. Because of Athale’s perceptive analysis and captivating storytelling, this book is essential reading for history buffs and anyone interested in learning more about the lesser-known but overlooked aspects of India’s past. One of the main arguments being made is the tendency of Indians to document and preserve our past ourselves rather than depending on foreigners for their records during their journeys.

The unwavering spirit of Shivaji and his goal of Indian self-rule, ‘*Hindavi Swarajya*’ (Indian Self-Rule), which constituted a serious challenge to British colonial ambitions, are shown vividly in the book. The author deftly examines the historico-political context, elucidating the intricacies of Maratha-British relations and the calculated manoeuvres that characterised this period.

The book is a testament to the author’s extraordinarily diligent efforts to comprehend Maratha militants and their methods of waging war. Reading about political strategy, battle tactics, and other significant notes and maps, yes, the author provided maps for each conflict, painstakingly compiling every last detail that

occurred 600 years ago, paints incredibly detailed research and a vivid picture for the readers.

The author has weaved a fascinating tale from the end of the Mughal rule under Aurangzeb who had died an unsatisfied death due to the way Shivaji had played the Mughal forces and the Bijapur Sultan to emerge victorious. He has included various instances where Shivaji has used unusual tactics to emerge victorious and many-a-times played the long game. There have been comparisons made as to how the Maratha Empire was different in its views and conduct relating to wars and victories compared to the rest of the powers which existed at the time.

Alongside, the author has been critical of all sides and has tried to give a narrative which has covered both the wins and losses and not tried to leave anything out of the account as possible. The advent of the British had been through the major ports due to which they had majorly acted in the coastal regions. The Anglo-Maratha wars, the diplomacy attempts and all anti-British acts which took place with the Marathas along with all the struggles which they faced be it geographical or any other reason have been discussed in a manner which is engaging to everyone, whether a novice or not.

The author's skill and perseverance is commendable for undertaking this enormous amount of study, as they connect the disjointed puzzle pieces discovered centuries after knowledge vanished due to calamities.

When practically everything was being destroyed by the Mughals in 1689, it was a difficult but exciting trip to bring history to life for readers of the new generation. Zulfiqar Khan's conquest of Raigad, the Indian capital, on 19 Oct 1689, was a catastrophic day in Indian history. Historians believe that this crime is just as damaging as Bakhtiyar Khilji's 1193 burning of Nalanda University and its library. This revelation generated a compelling reading atmosphere that will send shivers down the spine if the reader enjoy reading historical fiction or literary works about governance and administration.

The author skilfully combines storylines with historical details to provide readers a rich and immersive experience. The writer's work gives a thorough summary of the political and social dynamics

of the era, covering everything from the fall of the Mughal Empire to the British colonisation. The reader's comprehension of the hardships and accomplishments of the Marathas is improved by this contextualisation.

Conclusion

'The Legacy of Shivaji the Great' by Colonel Anil Athale offers an engrossing exploration of a crucial era in Indian history that is frequently disregarded in popular accounts. The writer skilfully illuminates the little-known tale of the Maratha people's resistance to British colonisation, illuminating the crucial role Shivaji and the Marathas played in determining India's future. It is a critical analysis of the manner in which history is presented to future generations by historians particularly the British who moulded the history according to what suited their needs. And to the contemporary politics of the twentieth century which felt the need to legitimise the Mughal rule and then the Maratha politics which diminished his stature by framing him as a parochial Maratha figure. These three manners where the role of Shivaji was made to fit a mould which suited the needs of the three was one of the primary reason why the might of the Maratha Rule was diminished and further reduced it to a mere afterthought in the Indian history. The author has reached a fine hypothesis based upon his research which makes it a question as to why the history of our nation is taken in the manner which suits the needs, and not what was the reality. Shivaji's style of waging war is a study in itself, as it had all the elements of modern warfare. And the Maratha Rule is probably one of the best examples of a democratic state and its application of the principles of democracy in mainland India post the advent of the Mughals and the Afghans.

Colonel Ravinder Kumar Sharma

Maritime Operational Law by UC Jha and Kishore Kumar Khera; (Vij Books, New Delhi, 2023); Paperback Book; Pages:205; Price:950; ISBN-13. 9788119438839

The volume on 'Operational Maritime Law' by UC Jha and Kishore Kumar Khera is a fine compilation of the existing international laws that regulate maritime matters. These include customary international law and some aspects of Indian national laws, which govern the conduct of maritime military operations. Written in

language that can be understood by a layperson, it is thoughtfully chapterised so that specific aspects of maritime law can be referred to when required. The book is concise and gives adequate references to additional works/specific laws/rules/regulations to enable detailed perusal where necessary. It is very well edited and factually accurate.

In Section 1, the first chapter, 'Casting Off', has a useful compilation of all existing laws and manuals that currently regulate the conduct of human activities on, over and under the oceans. It also contains a chronology of various international laws and treaties from which the modern laws and manuals have evolved. Section 2 comprises of four chapters which elaborates on some specific 'Means and Methods' of maritime warfare to enable the reader to interpret what actions these provisions entail in practical terms. Individual chapters on maritime blockade, mine warfare and submarine warfare are useful amplifications of existing laws, which will go a long way in enhancing the understanding of the readers on these specific aspects.

Section 3 has three chapters on 'Contemporary Complexities' is the most interesting portion of the book as it examines the emerging forms of maritime warfare through autonomous vessels, as also the modern form of piracy. This section adds to knowledge on new issues of maritime law that are emerging and would need to be codified in the future. This is an area where further study is required, especially by Indian professionals and researchers, in order to further evolve customary international law.

While the book largely re-states the existing laws and regulations governing the maritime space, its value to the reader lies in the fact that myriad laws and regulations are collected in one volume, which enables the reader to gain knowledge of the overview/history of the issue. The detailed footnotes and citations indicate detailed research by the authors and are useful for further reading and referral. The book is recommended for all maritime practitioners, particularly in the Indian Navy and the Coast Guard. It is also useful for students of maritime law and related fields, as also researchers on the subject.

Vice Admiral (Dr) AK Chawla, PVSM, AVSM, NM, VSM (Retd)

CHINA: Courts, Criminal Law, and Criminal Procedure Law.
By UC Jha; (Vij Books, New Delhi, 2023); Pages: 479; Price: Rs1850; ISBN: 978-81-19438-34-1 (HB).

The book covers China's criminal justice system and is divided into two parts. The first part encompasses China's criminal laws and procedures that are followed for the prosecution of persons accused of committing crimes in the country, whereas the second part contains an English version of various laws applicable in criminal prosecution in China. Chinese criminal law is applicable to both, citizens of China and foreigners who commit crimes within the territory of China.

The book starts with an introduction (Chapter 1) about the brief history of China since it became a republic in 1949, and then briefs about the administrative division of China. It introduces the judicial system, including the hierarchy of courts and reporting structure and appointment of the judges. Chapter 2 delves into the court system in China while referring to the functions of various organs of the court, like 'Procuratorates', 'Public Security Organ', and the 'Adjudication Committee'. Chinese law does not allow for 'The right to remain silent'. The Chinese courts, in the course of making decisions, rarely make any direct reference to decided cases from other Chinese courts.

Chapter 3 discusses the criminal law of China, starting with a brief history of the evolution of criminal law. The criminal law upholds the principle that punishment should be combined with education so as to reform a criminal. This chapter also covers the goals and types of punishments which could be awarded under the Chinese criminal law. Chapter 4 provides a detailed analysis of the criminal procedure law. The justice system in China now allows for 'Criminal Reconciliation', whereby offenders, through private negotiations with the parties concerned, can have their sentences reduced or even suspended by offering economic compensation to their victims in exchange for forgiveness.

Chapter 5 analyses repressive detention measures followed in China, which include 'Residential Surveillance at a Designated Location (RSDL)' system and the '*Liuzhi*' system. The RSDL can be performed at the residence of the criminal suspect or defendant, if there is no fixed residence then at a 'Designated Location'. RSDL is in fact an extra judicial measure and there is no

requirement for a court order and is imposed before arrest. Another system of unaccounted detention called '*Liuzhi*', which can be translated to 'Stay and Placement', created a new anti-graft agency, the National Supervision Commission (NSC) to oversee it. The NSC has the power to investigate all state employees, who could be subjected to *Liuzhi*. The United Nations (UN) experts have repeatedly called on China to repeal these systems, citing serious human rights concerns.

The sixth and seventh chapters are dedicated to 'Death Penalty' and executions in China. It provides a brief history of the death penalty, followed by the opinions of legal reformers and international reports and then, lists the crimes which result in the death penalty being awarded. It then proceeds to give the trial procedure for death penalty cases, death penalty review procedure, and the limitations, while giving examples of specific cases.

In 1998, China signed the International Covenant on Civil and Political Rights (ICCPR), which provides for fundamental judicial protection of human rights. Though not yet ratified; by signing the ICCPR, China is obligated to refrain from acts which would defeat the object and purpose of the Covenant, including the right to a fair trial in criminal proceedings. According to a national report submitted by China in accordance with UN Human Rights Council Resolution 16/21 in Nov 2018, "[...] deeper reform of the judicial system is still needed, the function of legal supervision has yet to be brought fully into play. The recent amendments to the Criminal Law of China, which will be applicable from 01 Mar 2024, stipulate a heavier punishment for bribers who offer bribes repeatedly or to more than one person, or offer bribes to state functionaries, supervisors, administrative law-enforcing officers, and judicial officers".

A number of academicians, lawyers, and human rights activists in China have expressed their opinions on wrongful conviction in criminal cases, including the death penalty. This issue has been critically analysed in Chapter 8 of the book. Chapter 9 concludes with remarks that the Chinese Government officials have weaponised the law. Xi trumpets 'Rule of Law' rhetoric to hide his lawfare; but he has distorted the true meaning of the phrase because, he vehemently opposes an independent judicial system that limits and controls the power of politics.

The second part of the book contains the latest English versions of the Chinese laws, which include: Criminal Law of the People's Republic of China (PRC), 2020; The Criminal Procedure Law of the PRC, 2018; Procurators Law, 2019; Lawyers Law, 2019; Judges Law, 2019; and Law of the PRC on Administrative Penalty, 2021.

The book is a must read for those interested in the Chinese legal system and serves as a ready reckoner.

Group Captain Sharad Tewari, VM (Retd)

The Army Way: A reminiscence of childhood experiences and life lessons by Dr Sartaj Chaudhary; Self-Published; Page 80; Price Rs 327/- Amazon Kindle Edition; ISBN-9798395252432

'The Army Way' is a captivating memoir that provides an enlightening and heartfelt insight into the life of a young girl growing up in the distinctive environment of the Indian Army. Authored by Sartaj Kaur Chaudhary, daughter of an army officer, the book takes readers on an enchanting journey through her formative years, offering a plethora of memories, observations, and life lessons.

One remarkable aspect of the book is the meticulous description of the various army stations where the author resided. Her attention to detail is remarkable, as she not only portrays the physical surroundings but also captures the atmosphere and the profound sense of belonging inherent in each location. In each chapter, she has brought out important life lessons which she imbibed during her life. These lessons, she suggests, have shaped her into the person she is today, instilling in her a sense of empathy, strength, and determination. Lessons that readers are encouraged to embrace for their own personal growth and enhancement.

The author very beautifully articulated her relationship with everyone, be it with her family members or her friends. She brings out the importance of discipline with which her parents brought her up, laced with their love. She also talked about the 'Batmans' (Jawans deputed to look after the needs of an officer) who were very helpful and supportive. She elucidates the significance of camaraderie within the army community, where the entire unit is regarded as an extended family. In discussing her life, she also described the simplicity of her upbringing during the era when

they did not wear designer clothing, were not accustomed to lavish gifts, engaged in games such as UNO and hide-and-peek, and watched movies weekly on the 'Doordarshan' channel every Sunday. Such activities, though lacking in extravagance, provided joy in every moment. She also exemplifies religiosity, and also shared an incident where when she was not wearing 'Kara' (a Sikh religious bangle made of steel) her foot got entangled in the rear tire of her bicycle. Since then, she never took it off, as she believes it offers her divine protection.

Sartaj also reflects on her journey towards independence and self-discovery. Despite the sheltered life she led, she wanted to explore the world beyond the confines of the army cantonment. This desire for independence culminated in her participation in an army camp organised for wards of army officers, where she was exposed to novel experiences and perspectives that challenged her worldview.

The book concludes with the retirement of the author's father from the Indian Army, symbolising the end of an era and the commencement of a new chapter in their lives. It serves as a poignant reminder of the sacrifices and joys that come with an army way of life.

In conclusion, 'The Army Way' is a compelling memoir that offers a unique perspective on life in the Indian Army. Through her engaging storytelling and insightful reflections, the author invites readers to share her journey of growth, discovery, and independence. This book resonates with readers of all ages, provides glimpses into the military world, which may be alien to some.

Ms Komal Chaudhary

India and the UN Peace Operations: In Service of Humanity and Global Peace by *Colonel (Dr) Kulwant Kumar Sharma (Retd)*. *USI of India and Indian Council of World Affairs, Pages 478, ISBN-978-93-94915-78-7, Price Rs 1880.00*

'India and the United Nations Peace Operations (UNPO): In Service of Humanity and Global Peace', a product of collaborative work of the Indian Council of World Affairs and the United Services Institution of India (USI), is the second book on the UNPO authored by Colonel (Dr) KK Sharma. His earlier book 'For the Honour of

India: A History of Indian Peacekeeping' was published in 2009 covering Indian participation up to 2008. This book covers the latter period until Aug 2023 which includes India's first contribution to UNPO in Korea as well as its participation in the United Nation's (UN) current traditional and complex missions. For better comprehension, the book has been divided into three chapters: 'Inter-State UN Operations', 'Intra-State UN Peace Operations' and 'UN Multi-Dimensional Peace Operations'. The author begins the book by providing a brief history of UNPO, highlighting some of the important contemporary challenges of the UN and a brief insight into India's contribution to peacekeeping and that of the Indian leadership in the 'Introduction' itself. This helps the readers to know what is to be expected in the main chapters of the book.

What is unique about this book? First, the section on Indian leadership's contribution to peacekeeping, as explained in the introduction, is the starting point for an institution like USI to update the data bank regularly. Because, besides uniformed peacekeepers, India has the distinction of contributing to several senior-level appointments both at the UN Headquarters and in the field at decision-making levels.

Second, the available literature on India's contribution talks about the period from the first international engagement in Korea. There is, however, no reference to what and how India has contributed to the Indo-China International Supervisory Commission, both at strategic and operational levels. Even though it was not a classical UN peace operation, following the conclusion of the Geneva Agreement to find peace after the internal conflicts in the Indo-China region (modern-day Vietnam, Laos, and Cambodia), the International Control Commission and International Commission for Supervision and Control were established. India had the unique distinction of chairing three commissions, the Cambodia Commission, the Vietnam Commission, and the Laos Commission. The section has beautifully brought out that while the UN can triumph over the success of the Geneva Agreement, it was India that provided the bulk of the peacekeepers.

Third, reference to participation by only the military as uniformed peacekeepers in peacekeeping is a limited understanding of the contribution by other stakeholders, including UN civilian police, civilian staff, and other associated agencies, who have the

common goal of saving innocent civilians from the scourge of war. To this end, India's contribution to the UN Police is something that has been missing in the available literature, but the detailed section on Indian police peacekeepers' service has filled this gap in information. The reviewer brings out his personal experience of difficulty in collecting data related to India's police participation. Given the details of the information provided in the book, one can recognise and acknowledge the effort put in by the author to make the book rich in its content.

Fourth, because of the current turmoil in geopolitics and ongoing threat to international peace and security, the failure to prevent the Ukraine and Gaza Wars and the rise in civilian casualties in some of the intra-state conflicts in the African region, the UN in general and peacekeeping in specific have come under criticism. The host states are increasingly asking some of the peacekeeping missions to exit and exerting their confidence to manage the conflicts by themselves, which has raised several debates on the future of UN peacekeeping. The author ends his book with a section on the future of UN peace operations, which is the icing on the cake.

Fifth, but not the last. The character of UNPO has undergone much change. After the end of the Cold War, intra-state conflicts became more pronounced in the newly independent countries, and UNPO stepped in with multi-functional mandates to keep the peace in the countries that were in the middle of vicious conflict, which caused destruction to the societies and institutions, and inflicted casualties on innocent civilians. India has been at the forefront of peace operations since the time of international engagement in the Indo-China region in the 1940s until the current complex intra-state conflicts in the African region. India's contribution has been and continues to be acknowledged across the world. Being one of the major troop-contributing countries, India has earned the legitimate right to take pride in its contribution to UNPO. Drawing lessons from their own experiences and benefiting from them by successive generations helps the troop-contributing countries' contribution to UNPO rich. However, unless there is sufficient literature that is easily accessible, the learning process will not be complete. When one tries to delve into the rich history of Indian participation in UNPO, it is a challenge because of the absence of records other than some factual data such as

the strength of peacekeepers, names of the missions, details of the casualties, etc. In contrast, the western nations, which rarely participate in dangerous peace operations, do a good job of highlighting western contributions even though they pale in front of Indian contributions. It is probably because a country like India is busier with other important national issues and the western nations have more time to dwell upon international geopolitical issues. This is where this book stands apart. The author, besides describing and analysing the missions that could not be covered in his previous book, by focusing on the strategic and operational issues of the respective peacekeeping missions, has been able to create interest among a wide spectrum of readers. In addition to the available literature on the subject, the author took pains to interview and obtain first-hand information from some of the former peacekeepers, some of whom held positions at senior levels, to get their perspectives from the field.

As a student of UNPO, the reviewer states that he has read several books and always felt the need for something like this book to bridge the gap in the literature on Indian participation in UNPO. Those who have even a slight interest in UNPO must read this book. It can be labelled as a reference book on Indian contributions to UNPO. Besides being able to be better informed, students of UNPO like me will be better informed. Only a practitioner cum academician with years of experience can author a book like this. The reviewer compliments Colonel (Dr) KK Sharma who is also a Visiting Fellow of the USI of India for his work. The author's vast experience should inspire other practitioners cum academicians to put down their experience for successive generations to benefit.

Major General (Dr) AK Bardalai (Retd)

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- Any category mentioned above will be eligible even though retired or released from the Service.
- Cadets from the National Defence Academy and Cadets from the Service Academies and Midshipmen.

For further particulars, please write to Director General, USI of India, Rao Tula Ram Marg, (Opposite Signals Enclave) Post Bag No. 8, Vasant Vihar PO, New Delhi – 110 057

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USI

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OUR ACTIVITIES

Library and Reading Room

The library holds over 68,000 books, and journals, including some books of 17th, 18th and 19th Centuries, on an astonishing variety of subjects. While the principal emphasis is on strategy and defence, there are a large number of works on different vistas of Indian life. There are memoirs, biographies, recollections, diaries, journals, manuscripts for scholars and researchers. The reading room is air-conditioned, spacious and well stocked in terms of current reading material. Library was automated in 2002.

Correspondence Courses

The Institution runs regular correspondence courses for officers of the armed forces to assist them in preparing for promotion examinations, and for the entrance examinations to the Defence Services Staff College and Technical Staff College. Over the years, this has been a significant and well-received activity.

USI Journal

The USI Journal is the oldest surviving defence journal in the country and in Asia, having first appeared in 1871. In an era when there is a feeling that free expression of views by defence personnel is not looked upon kindly by the establishment, the Journal in fact provides just such a forum, without regard to seniority and length of service in the armed forces, subject of course, to propriety and quality of the written work.

Centre for Strategic Studies and Simulation (CS3)

The erstwhile Centre for Research and its resources have been merged into the new Centre named as CS3 wef 01 Jan 2005. The Centre aims at conducting detailed and comprehensive enquiry, research and analyses of national and international security related issues, and gaming and simulation of strategic scenarios, to evolve options for wider discussion and consideration.

USI Centre for UN Peacekeeping (CUNPK)

The Centre was established in 2000 and functioned with USI to organise workshops, seminars and training capsules for peacekeepers, observers and staff officers, both Indian and foreign. It also oversaw the practical training of Indian contingents. In Aug 2014, CUNPK moved out under the Integrated Headquarter of Ministry of Defence (Army). The USI has now established a United Nations (UN) Centre which is focusing on operational, strategic and policy issues related to UN Peacekeeping. It also organises seminars and conferences on such issues.

Centre for Military History and Conflict Studies (CMHCS)

The CMHCS was established in Dec 2000 at the behest of the three Service Headquarters for encouraging an objective study of all facets of Indian military history with a special emphasis on the history of the Indian Armed Forces. It focuses on diverse aspects of the history of Indian military evolution, policies and practices-strategic, tactical, logistical, organisational, socio-economic, as well as the field of contemporary conflict studies in the broader sense.

Centre for Atma Nirbhar Bharat (CANB)

The Centre was established on 01 Jan 2024 and also includes Cyber Centre of Excellence (CCoE) as part of it in conjunction with Cyber Peace Foundation. The Centre's objective is to forge emerging technologies with geostrategic and geopolitical situations with a view to make the services self-reliant by making possible the indigenous production of defence equipment and spares. The CCoE trains the military personnel in artificial intelligence, cyber and machine learning in addition to cyber forensic analysis in its well-equipped Lab.

Gold Medal Essay Competition

Every year the Institution organises a gold medal essay competition open to all officers. These essays, the first one of which was introduced in 1871, constitute a barometer of opinion on matters that affect national security in general and the defence forces in particular.

USI-War Wounded Foundation Joint Essay Competition

This essay competition was instituted in 2021 after signing of the Memorandum of Understanding between USI and the War Wounded Foundation. The competition is open to all across the globe and must be on the subject of issues relating to the experiences and/or rehabilitation of war disabled personnel of the Indian Armed Forces.

Lt Gen SL Menezes Memorial Essay Competition

This has been instituted from 2015 on a subject related to armed forces historical research. The essay competition is open to all across the globe.

Lectures, Discussions and Seminars

A series of lectures, discussions and seminars on service matters, international affairs, and topics of general interest to the services, are organised for the benefit of local members in Delhi.

MacGregor Medal

This medal is awarded to armed forces personnel for valuable reconnaissance and adventure activity they may have undertaken.