

# U.S.I. JOURNAL

**INDIA'S OLDEST JOURNAL ON DEFENCE AFFAIRS**

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Should We Deal with this Paradigm Shift (Retd)

India's Foreign Policy in Evolving - Major General BK Sharma (Retd)  
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The Corps of Bombay Pioneers - Colonel Harjeet Singh (Retd)

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India's Light Combat Aircraft (LCA) Tejas Mr Rahul Manohar Yelwe

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**Vol CLII**

**OCTOBER-DECEMBER 2022**

**No 630**

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## USI LATEST PUBLICATION DURING 2022-2021

Pub Code	Title of Book & Name of Author	Price(Rs)	Year
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
CS3 R-114**	"Geo-Politics of Water in South Asia : Implications For India" By Col Anurag Jyoti	1250	2022
CMHCS-6*	"GALLIPOLI REVISITED" Edited by Sqn Ldr RTS Chhina, MBE, (Retd) and Amb Asoke Mukerji, IFS (Retd)	800	2022
OP-4/22**	"Theaterisation : A Way Ahead" By Maj Gen BK Sharma, AVSM, SM & Bar (Retd) and Maj Gen RS Yadav, VSM (Retd)	250	2022
Adm-SYB/22**	"Strategic Year Book 2022" Edited by Maj Gen BK Sharma, AVSM, SM & Bar (Retd), Lt Gen GS Katoch, PVSM, AVSM, VSM (Retd) and Gp Capt Sharad Tewari, VM (Retd)	2250	2022
Adm-6 (UNPO)/2022**	"UN Peace Operations Part - VI : Challenges of Mission Leadership in UN Peace Operations in delivering the mandate" Edited by Maj Gen AK Bardalai and Maj Gen PK Goswami, VSM (Retd)	350	2022
OP-2/2022**	"India and Blue Economy : Challenges and Way Forward" by Dr Roshan Khanijo & Ms Samridhi Roy	325	2022
OP-3/2022**	"Military Manual on Laws of War" by Wg Cdr Umesh Chandra Jha (Retd)	250	2022
M-1/2022**	"Eastern Military Thought" by Colonel Harjeet Singh (Retd)	325	2022
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CMHCS-4**	"BATTLE TALES" – Soldiers' Recollections of the 1971 War" Edited by Sqn Ldr RTS Chhina, MBE (Retd)	1350	2022
R-111**	"STRATEGIC YEAR BOOK 2021" Concept and Structure by Maj Gen BK Sharma, AVSM, SM & Bar (Retd), Edited by Lt Gen GS Katoch, PVSM, AVSM, VSM (Retd), Gp Capt Sharad Tewari, VM (Retd) and Dr Roshan Khanijo	1850	2021
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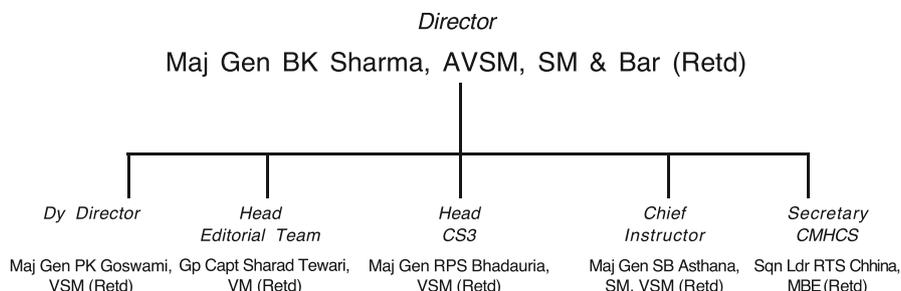
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**Editor**

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1. The USI conducts correspondence courses for DSSC – Army and Navy, DSTSC (Army) Entrance Examinations and Promotion Examinations Parts B and D.
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3. Membership of the USI is mandatory to join any correspondence course.
4. Schedule of Correspondence Courses 2022-23.

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(a) DSSC (Army)	3 <sup>rd</sup> Week of Nov 2022. Registration Open for 2023	Sep 2023	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 <sup>st</sup> Week of Jan 2023	Jul 2023	–	Rs 3000/- for Paper-1
(c) Part B	2 <sup>nd</sup> Week of Dec 2022. Registration Open for 2022	Jun 2023 to Jul 2023	Rs 3000/-	Rs 1000/- each for Tac, CA & MH Rs 800/- each for Adm & ML
(d) Part D	1 <sup>st</sup> Week of Apr 2022. Registration Open for 2023	Oct 2023	Rs 4000/-	Rs 1500/- each for Tac, CA & MH Rs 1000/- each for Adm and ML

5. **Contact Programmes.** Three contact programmes for DSSC/DSTSC (Army)-2023 have been planned. Dates are : **19-24 Jun 2023, 03-08 Jul 2023** and **17-22 Jul 2022**. Separate test papers will be set for each programme. Fees – Rs 6000/- per contact programme.
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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](mailto:dde@usiofindia.org). In the email 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.

## GUIDE TO WRITING ENDNOTES

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:-

<sup>1</sup> 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.

<sup>2</sup> 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.*

*Ibid*, refers to the immediate preceding reference; *op. cit.* refers to the prior reference by the same author and *loc. cit.* is used instead of *op. cit.* when reference is made to a work previously cited and to the same page in that work. For example:

<sup>4</sup> R Polrer, *Learning Physics*, (Academic, New York, 1993), p 4

<sup>5</sup> *Ibid*, p.9.

<sup>6</sup> T Elliot, *Astrophysics*, (Springer, Berlin, 1989), p.141.

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

<sup>8</sup> Elliot, *op cit.*, p148.

<sup>9</sup> 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 Dec 2022**

During this period a total of 45 new books have been added. Details of the new books are available on USI Website.

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During the period Oct–Dec 2022, 24 registered as New Life Members; 01 Ordinary Member renewed membership and 192 registered as new Ordinary Members.

### **Course Members**

During Oct-Dec 2022, 377 Officers registered for Course Membership.

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**Dear Members,**

As the year 2022 draws to a close, let me wish the USI fraternity and their families a very happy and prosperous 2023.

At a juncture when a buoyant India is well on its transition from a balancing power to a leading power, unprecedented geopolitical developments are unravelling at a fast pace in our strategic neighbourhood and beyond. The three strategic shocks viz., corona pandemic, Talibanisation of Afghanistan and Ukraine crisis have impacted globalization and world order with far-reaching ramifications for India. The ensuing strategic environment is characterised by VUCA (Volatility, Uncertainty, Ambiguity and Complexity). There is a new great game manifest in Eurasia and Indo Pacific and it is expanding to other strategic frontiers such as technology, trade, cyber space, outer space and cognitive space. What we are witnessing is the growing trend of multi-domain warfare that combines politics, economy, diplomacy, military, technology and other dimensions of national power and seeks employment of multitude of means; state players, non- state actors, military and non- military, linear and non- linear, applied seamlessly across the spectrum of conflict and up the escalation ladder. The lines between classic state to state wars and peace are blurred by grey zone conflicts. India's perspective and threat perception on collusive hybrid threats that inextricably link internal security challenges with external security threats, need to be re-examined in the context of this New Generation Warfare that our adversaries are becoming apt at. In the spiralling contestation, we see revamping of US led Euro-Atlantic alliance, NATO, East Asian security alliance, QUAD and AUKUS on one hand and China and Russia strategic embrace on the other. It has put middle level and small powers on the horns of dilemma causing them to hedge, align and rebalance their strategic interest vis a vis contending behemoths. Ironically, international institutions, particularly UNSC have become virtually dysfunctional in conflict prevention and management. Historical animosities, conflicting core interests, presence of volatile flash points, dangerous military posturing amid deepening strategic mistrust and lack of conflict prevention

mechanisms collectively heighten the chances of use of force at the peril of global security.

India's strategic security environment too is in ferment. It continues to face collusive hybrid threats from Pak- China nexus. Instability in South Asia has further complicated India's strategic environment. Creditably, India has well- managed its security challenges in Kashmir and Northeast India, deterred aggression at the LAC and LoC, preserved its strategic autonomy in the current crises and become a force of stability in South Asia by reaching out to its neighbours. However, the evolving strategic scenario demands that India should critically examine vital strategic issues with a view to identify challenges and opportunities and clearly map asymmetries and competitive edges vis a vis its adversaries and competitors. A more nuanced and sophisticated understanding of endogenic and exogenic strategic environment is mandatory to identify the strategic capacity gaps and consequently articulate a roadmap for the transformation of our country, empowering it to emerge as a pre-eminent power in its extended neighbourhood, a major power in the Indo-Pacific and an important stakeholder in the new world order. This transformation process ought to be not only 'All of Government Approach' but 'Whole of Nation Approach'. In this endeavour, integration and synergy of multi- domains and instruments of national power is an abiding strategic imperative. India's Presidency of G-20 and SCO in 2023 provides us a great opportunity to shape the strategic environment in a manner that positions New Delhi to plan a major role in re-shaping the global order.

During the year 2022, the USI bounced back after three seasons of Covid pandemic. I am grateful to the outgoing USI Council for their guidance and unstinted support to help the USI navigate through the difficult period of Covid pandemic. The USI, in keeping with its rich traditions, has consistently maintained an upward trajectory of performance, despite financial constraints. The management deserves compliments for the renewal of Land Lease and registration of USI under Section 80G and under Section 12A in the current financial year. The elections for the new Council have been successfully held. New clusters and benchmarks have been setup to enhance the image of the Institution, the Indian

Armed Forces and the Nation as a whole. USI has signed a number of MoUs with national and international institutions and introduced new Chairs of Excellence (CoE) and Memorial Lectures.

The Centre for Military History and Conflict Studies (CMHCS) has created a new Military History website, written a book for the Indian Army, and made good progress on Army Digital Archive project. It is playing a stellar role to showcase India's military heritage as part of our soft power diplomacy. New initiatives such as holding international military festival are being pursued vigorously. Strategic Track 1.5 Dialogues have been initiated with our foreign collaborators.

The Centre for Strategic Studies and Simulation (CS3) continued with its niche in strategic Net Assessment studies, strategic gaming, and development of Strategic Gaming Model for the Defence Research and Development Organisation (DRDO). Conduct of National Level Wargames and International Multi-lateral Table Top exercise for the representatives of the Maritime Law Enforcement Agencies (MLEAs) of the littoral states to the Bay of Bengal has enhanced international visibility of the Institution.

Recognising the domain expertise and the contribution of the Course Section (CS), IA (ARTRAC) designated CS as a node of excellence for the conduct of 'online phase' of command Pre-Staff Course for three subjects, besides writing precis for promotion and competitive examination.

Consequent to Centre for UN Peacekeeping (CUNPK) becoming a full-fledged unit of the Indian Army, the USI is now focusing on the operational, strategic and policy issues related to UNPK. This year the USI, in collaboration with global partners, conducted Challenges Annual Forum 2022 on the theme, 'Future of UN Peacekeeping Operations (UNPKO)'. The event report will provide a valuable input for the Secretary General's UNPK Summit 2023.

USI-ANBI (*Atamnirbhar Bharat* Initiative) has provided a platform to build synergy between users, designers, developers, and manufacturers with decision makers and, perhaps, even financiers through collaboration in the field of disruptive and niche

technologies and having MoUs for synergising the efforts of defence security, strategic affairs, and issues in cyber domain.

The USI conducted a number of signature events during the year which included seminars, panel discussions, memorial lectures, special lecture series by the Service Chiefs, new Chairs of Excellence, MacGregor Medal award ceremony, conduct of Strategic Games, Strategic Net Assessment studies, DRDO project, and skill development programmes. The events such as conduct of national level Strategic Gaming Exercise, International Peacekeeping Seminar, and International Table Top Exercise have enhanced the installing global footprints.

The USI library with a collection of over 69,764 books, some dating back to 16th and 17th centuries, is a storehouse of knowledge and archival material. During the year, a total of 346 books have been added to the library. The library has Army Lists since the days of the Presidency Armies, dating back to 1793 (Bombay Army List), which are sought after by many, to locate service details of their ancestors. As part of the Information Service for its members, the library is putting out a digital compilation of educative articles from around the world which have come online in the previous fortnight under the name 'Fortnightly First'. The 'Fortnightly First' contains 15 researched articles selected after a scan of national and international think tanks. Articles are then made available on the USI website under Library drop down menu.

The Institution began with a membership of 215 members and it increased to 3500 when USI moved to the present premises in 1996. Today, we have 13575 members. The drive to grant Civilian Special Membership to deserving cases has yielded good results. With concerted effortsto update the addresses and contact details of members, inter alia through interaction with the AG's Branch and Veteran Directorates of Army, Navy and Air Force, membership details of 797 members were updated in the process.

The USI has increased its footprints in the digital domain and expanded its presence through several new social media platforms which include LinkedIn, Instagram, and Telegram in addition to

Twitter, Facebook, and YouTube. During the year we have witnessed uptick in our digital presence. As a part of digital transformation and to improve the outreach and visibility of the organisation, the initiative is in process to create a new website of USI, making it more user and mobile friendly. In due course, we will streamline our system to enable us to get digital photographs of the individuals and their signatures through the portal for issue of membership card without asking for the physical visit of the individual to the USI premises. Gateways for payments are also in the process, for online acceptance of various type of payments

USI has been facing huge financial constraints since 2011 due to lack of grant / aid from the Services or MoD. The financial health of the Institution further aggravated since 2020 due to abysmally low bank rate of interest and loss of income from traditional sources due to Corona pandemic. In the meanwhile, inescapable expenditure had to be made for bare minimum repairs of old infrastructure and up-gradation of audio-visual facilities in the seminar rooms. The USI management resorted to extreme austerity measures during 2021-22. The financial status of the USI will remain critical unless there is major infusion of funds / grants from the Services / MoD. In the meanwhile, efforts to raise funds through collaborations and corporate entities have been intensified.

As I conclude the 'Director's page' for 2022, I would like to acknowledge the excellent services provided by the Residency Resorts to the members of the USI and visitors. I commend the staff of Residency Resorts for their efficiency and politeness and efforts made to ensure a neat, clean and friendly lodging at this oasis of calm in a bustling part of Delhi. The utilisation of the Residency — by the Institute of Military Law which had shifted to Delhi Cantt from Kamptee in Jan 2021 — for accommodating JAG Branch officers undergoing courses is testimony to the standards of the Residency.

I thank the esteemed members of the USI, who have actively participated in various activities organised by this prestigious Institution in the year 2022. It gives us great pleasure and satisfaction when we have good participation — especially from

the serving community — at events organised by us. I urge all members to periodically spread a word around about the activities undertaken by us and encourage others to also attend. May I request our esteem members to subscribe to our following social media:

**Twitter:** <https://twitter.com/USIofIndia>

**Facebook:** <https://www.facebook.com/United-Service-Institution-of-India-106336161119653/>

**YouTube:** <https://www.youtube.com/@unitedserviceinstitutionof5147>

**LinkedIn:** <https://in.linkedin.com/company/united-service-institution-of-india>

Also encourage others to take USI membership.

With best wishes,

Major General BK Sharma, AVSM, SM & Bar (Retd)  
Director

## Editorial

Dear Readers,

We are happy to present the USI Journal for the 4<sup>th</sup> Quarter of the year 2022. USI has been able to bring out its quarterly Journal for the last 152 years. Over the years, the journal has made key contribution in educating people on national security, defence studies, and the ongoing geopolitical situation. The topics in this journal range from international crisis such as the Russia-Ukraine war, to internal concerns like grievance redress system in the Indian Armed Forces. There are 11 well researched articles and four short reviews of recent books in this issue.

The first article is 'If Technology is Redefining Warfare How Should We Deal with this Paradigm Shift' authored by Lieutenant General PS Rajeshwar, PVSM, AVSM, VSM (Retd). The article starts off with an introduction to new weapon systems that have significantly accelerated the pace of wars and changed the face of warfare. There is a detailed analyses on the weapon systems used in the Russia Ukraine conflict, and advancements in western, Chinese, and Indian technologies are discussed too. The author stresses on the need for constant innovation to tackle disruptive technologies.

Next is an article titled 'India's Foreign Policy in Evolving Geopolitical Scenario' by Major General BK Sharma, AVSM, SM & Bar (Retd). In this, the author highlights that at the present juncture, India is at the cusp of transiting from a balancing to a leading power. He explains that the evolving geopolitical scenario that is rife with contestation and mistrust poses strategic and foreign policy dilemmas for India. However, India has to develop her CNP and strategically configure it to promote its sharply defined national interests. In the next article, 'The Corps of Bombay Pioneers', the author Colonel Harjeet Singh (Retd) covers the brief history of the Corps of Bombay Pioneers. The article in brief covers the journey of various Bombay Pioneer units till they got merged into 2<sup>nd</sup> Bombay Pioneers and later, renamed as the Corps of Bombay Pioneers till they were disbanded in 1933.

For over seven decades, Indian defence industrialisation has aimed to achieve strategic autonomy through indigenous weapons systems for armed forces. The present government has set an ambitious target of defence expenditure of US \$5BN by the year 2024. The article 'India and Defence Exports: Prospects of India's Light Combat Aircraft (LCA) Tejas' by Dr Arun Vishwanathan and Mr Rahul Manohar Yelwe examines the case of indigenous LCA Tejas aircraft's capabilities and export potential.

'Sino-Russian Relations amidst the Ukraine War' authored by Ms Swayamsiddha Samal brings out that Russia and China are both flagbearers of Communism. Even though they have a shared ideology, their relations have been turbulent over the past. This article highlights the unity between the Soviet Union and China, the rough patches in their relationship, and the inevitable strengthening of the Sino-Russian relations in response to the rising west. The article concludes with an in-depth discussion on whether China's subtle change in stance on the Russia-Ukraine conflict is due to 'a confused Chinese policy' or a 'show of pragmatism'. The next article, 'Indian Civilisation from the Perspective of Oswald Spengler' is written by Major General (Dr) RS Thakur (Retd) and focuses on the relevance of moral philosophy of famous German historian Oswald Spengler to Indian civilisation. The article gives an insight into his outlook on many aspects of Indian civilisation, including the imperial nature of few Indian dynasties, Buddhism and Indian philosophy. Overall, an endeavour has been made to present the history of the Indian civilisation, from the perspective of Oswald Spengler to help the Indian strategic and academic community to have a better understanding of their civilisation.

The next article is 'Reforms in the Grievance Redress System' by Wing Commander (Dr) Umesh Chandra Jha (Retd). This article explains how the members of the Indian Armed Forces have been bestowed with the right to make complaints seeking the redress of their grievances. He writes on how there is need to replace the existing grievance redress system with an effective, transparent, and non-vindictive mechanism which is a sine qua non of an efficient military organisation. The following article is titled 'Do Non-Nuclear Weapon States Carry the Fear of Nuclear Threat? An Assessment

through the Lens of Ukraine-Russia Conflict' and is authored by Ms Saanjana Goldsmith. The Nuclear Non-Proliferation Treaty (NPT) came into existence in 1970 to keep nuclear checks and balances. The author sheds lights upon the NPT and its relevance through the lens of the ongoing conflict in Ukraine. The article further discusses Ukraine's journey from being the third largest possessor of nuclear weapons to being a non-nuclear weapon state under nuclear threat.

'Enhanced Remote Sensing Based Airport Detection: A Military Detection' is written by Lieutenant Colonel Puja Jha. Target detection is a significant area of study in remote sensing and is gaining importance in the military field. The article primarily focuses on airports, and the various interpretation keys for identification and analysis of this target in remote sensing data. The author also talks about target detection methods and the challenges faced in the detection of airports. The article concludes with a discussion on the possibility of a fully automated modern army. The next article 'How Geo-Strategy, Warfare and War-Tech have Changed in 2022: A Review of Events which shaped the new Paradigms of Warcraft' has been written by Mr Shaurya Dhakate. The article provides an overall assessment of major conflicts that took place in 2022. The author's research ranges from the behaviours of nations in the conflicts to the new strategic challenges that have emerged. The author further talks about the development of various new arms, and the birth of cyber space as another warzone.

The final article, titled 'Political Failure, Military Success: Sri Lanka's Economic Crisis of 2022' has been authored by Ms Radhika Daga. Here the author covers the Sri Lankan crisis of 2022, wherein the elected government lost its legitimacy and the general public took to streets in protest and the problems faced by the Sri Lankan military to control the law-and-order situation successfully.

This issue also carries short reviews of the following books:

- Drifts and Dynamics: Russia's Ukraine War and Northeast Asia.  
Edited by Sriparna Pathak and Manoj Kumar Panigrahi,  
Reviewed by Mr MR Narayan Swamy

- Lucknow 1857.  
By Rosie Llewellyn-Jones  
Reviewed by Maj Gen Jagatbir Singh, VSM (Retd)
- Arms and the Woman: The Shattered Glass Ceiling.  
By Maj Gen VK Shrivastava, VSM  
Reviewed by Ms Surbhi Chakraborty
- The Pashtuns : A Contested History.  
By Tilak Devasher  
Reviewed by Dr Jyoti Yadav

We look forward to your feedback and suggestions. As always, the USI Journal will strive to maintain our standards of research and writing, and simple, evocative, educative, and pleasurable reading. The USI acknowledges the financial assistance received from the ICSSR for publication of this Journal. The USI wishes all the readers a Very Happy New Year.

Happy Reading!

Gp Capt Sharad Tewari, VM (Retd)  
Head Editorial Team

# If Technology is Redefining Warfare How Should we Deal with this Paradigm Shift

Lieutenant General PS Rajeshwar (Retd)<sup>®</sup>

*“Space technology is an example of what security will mean for any strong nation in future. Various challenges in this area have been reviewed and identified by the three services. We have to work fast to solve them”.*

*Prime Minister Narendra Modi  
Oct 2022, Gandhinagar<sup>1</sup>*

## Abstract

*A number of technologies are being adapted to warfare, as we have noticed in Ukraine, Nagorno-Karabakh and Israel. The use of advanced weapon systems, techniques and tactics has significantly accelerated the pace of these wars. Emerging and disruptive technologies will shape warfare even further. To maintain their combat edge military leaders will need to develop a deeper understanding of technology, adapt and innovate to deal with this paradigm shift.*

## Introduction

**H**eraclitus, the Greek philosopher once said, ‘Change is the only constant in life’. Wars have increasingly become more complex in the last three decades or so. We are witnessing a number of technologies that are being adapted for purposes of warfare in Ukraine, while some instances were evident in the 2020 Nagorno-Karabakh war and 2021 Israel Palestine conflict. The wide range of available weapon systems, their accuracy, the destruction power of ammunition, novelty in employment, speed in execution of manoeuvres by combat forces and civilian contribution force us to look at changes in doctrine, force structures and military training.

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<sup>®</sup>Lieutenant General PS Rajeshwar, PVSM, AVSM, VSM (Retd) served in the Artillery. He commanded the Andaman & Nicobar Command as CINCAN and HQ IDS as CISC. His other command assignments included the Desert Corps, a Rashtriya Rifles Force and an infantry brigade on the Line of Control.

The recent passing of a significant Act on access to technologies by USA distinctly brings across its importance for national security. “It (CHIPS and Science Act of 2022) will strengthen American manufacturing, supply chains, and national security, and invest in research and development, science and technology, and the workforce of the future to keep the United States the leader in the industries of tomorrow, including nanotechnology, clean energy, quantum computing, and artificial intelligence”.<sup>2</sup> As accessing, adopting and applying technologies to tools of warfare becomes the norm, such restrictions are bound to be imposed by those nations who possess it. The gap between technology ‘haves and have-nots’ may only get bigger and have national security implications.

### **What most Militaries Need and Some are Getting**

Militaries make several demands for developing capabilities. Detecting an opposing force’s disposition and movement prior to attempting any manoeuvre is one. This is achieved in a complex operating environment through a fused process of Intelligence, Surveillance and Reconnaissance (ISR). Target Acquisition (TA) then gets added to this endeavour. Collection, collation, analysis and dissemination constitute a typical intelligence cycle, which has to be accurate, timely and well-integrated. Surveillance and Reconnaissance are more specific functions built around intelligence.

During the Ukraine war small, relatively cheap and expendable drones have been employed in abundance for ISR purposes against armoured columns, heavy artillery guns and vehicle convoys. Add to this ‘picture-taking and geotagging’ of battle zones by civilians in forward urban areas, that has served to provide targeting cues for the Ukrainian military. “Indeed, much of the Ukrainian military’s existing drone fleet consists of modified commercial drones, the Turkish Bayraktar TB-2 being a notable, successful exception”.<sup>3</sup> The Russians also have various sensors on drones/UAVs for collecting intelligence. ‘The Russian-made kamikaze UAV KUB-BLA was used in hostilities in Ukraine near Kyiv. The operation of KUB-BLA is based on artificial intelligence algorithms, so it can autonomously identify the target and destroy it’.<sup>4</sup> Thus, ISR has helped decision makers plan based on the threat and analysis of anticipated adversarial manoeuvres, while simultaneously protecting friendly forces.

The proliferation and widespread use of drones is changing battle dynamics. Countering drones by electronic warfare (EW) and air defence (AD) systems has hence gained attention. “Unmanned Aircraft Systems (UAS) can also be neutralised or destroyed using guns, nets, directed energy, traditional air defense systems, or even trained animals such as eagles”.<sup>5</sup> One of the big challenges for any defender, thereafter, has been the cost of employing such systems against the use of cheap drones by an attacker.

Another important aspect is achieving a fair degree of invisibility through camouflage and concealment from the enemy. “The technology, developed by Israel-based Polaris Solutions Ltd, provides multispectral concealment to the soldiers at battle in both thermal and visual ..... Called the Kit 300, the product uses thermal visual concealment (TVC) material to combine microfibres, metals, and polymers that renders soldiers on the battlefield literally invisible to a range of thermal cameras”.<sup>6</sup> These features help soldiers and equipment from getting picked up by various sensors to survive in combat. Increasing battlefield transparency demands greater research in this field.

As troops, formations and weapon platforms move, this must be done faster than the adversary to suffer less amount of attrition. What acts as a force multiplier is the speed of gathering, processing and acting on data. “It’s not HIMARS that’s winning the war for Ukraine, nor is it traditional artillery duels, ..... It’s their ability to process information at a faster clip than the Russians that is having a big impact here”.<sup>7</sup> Such differentials always become a battle winning factor.

Communications are the glue that keeps soldiers, units, platforms and formations functioning as a well-oiled war fighting entity. Secure communications are then a sine qua non. “It (Starlink) has since helped in basic communications in the country, in addition to assisting its military effort through linking drones for targeting strikes.....Russia sought to jam the systems, but Starlink technicians were able to bypass them”.<sup>8</sup> On the other hand, Russian soldiers suffered from using unsecured communications which compromised their operational security and sometimes revealed their low morale. Network-centric operations will warrant secure communications, if they are to be effective.

Space is becoming the medium critical to military intelligence, reconnaissance, communication, navigation and missile warning. Timely space situational awareness to provide a combat edge for land, maritime and air dimensions has consequently become vital. “Its (Palantir’s) AI-driven software is able to collect various data from the battlefield via different sources such as satellite images, report any suspicious activity to the general staff, and provide real-time solutions to particular problems on the field, making it more efficient to navigate through the fog of war”.<sup>9</sup> Some countries are countering their adversary by developing space weapons, carrying out cyber and electronic warfare, while planning for ground site attacks and directed energy weapons. “The disabling of several key satellites is enough to introduce chaos into basic Earth operations that rely on communication and timing”.<sup>10</sup> Space warfare presents huge challenges not only for nations at war, but also for all other space users. Space is now emerging as a unique domain by itself, linked yet distinct from air, and undoubtedly a quintessential part of multi-domain warfare.

The ability to hit at longer ranges is fundamental to any force that intends to cause casualties by battlefield interdiction. Apart from ‘sensor to shooter’ links and ‘shoot and scoot’ abilities, if artillery, rocket and missile systems are coupled with smart ammunition it makes them that much more potent. “Ukraine is currently using HIMARS for ....striking high-value Russian targets behind enemy lines to deprive frontline troops of supplies and artillery support”.<sup>11</sup> To neutralise such weapons the rival’s counter-battery systems then play a very significant role.

### **Adapting with Speed and the Need to Innovate**

The US articulates the importance of technologies in its vision of fortifying national security. “By modernising our military, pursuing advanced technologies, and investing in our defence workforce, we will have strengthened deterrence in an era of increasing geopolitical confrontation, and positioned America to defend our homeland, our allies, partners, and interests overseas, and our values across the globe”.<sup>12</sup> Thus, acquiring advanced defence technologies becomes a part of modernisation, while adapting with speed to the demands of warfare gains more salience.

Can every situation that might occur during war be anticipated accurately? Not really, as some can be visualised but in others

there will be huge variations. Technology aids both sides, however, the one which adapts swiftly to changing circumstances and is more resolute ends up being victorious. Russian Armed Forces adapted to Ukraine's staunch defence by modifying their strategic aim, consolidating forces and switching to attrition warfare instead of carrying out multiple manoeuvres. The Ukrainians too adapted by training quickly on diverse Russian and Western weapon systems for success in battle.

Innovating then becomes essential to stay ahead of the adversary. "Defense contractors are toeing that line by equipping Ukrainian MiG-29 and Su-27 fighter aircraft with anti-radar missiles designed for more capable Western jets. It typically takes the U.S. military a year or two to integrate new weapons onto a jet for the first time. In Ukraine's case, the process took just a couple of months".<sup>13</sup> Innovations, such as these, will need an enabling environment, deep focus and lots of enterprise.

The Russians too have innovated by using messaging apps to aim its artillery better. "The agency (SBU) said that it had discovered that Russian intelligence was using smartphone games to induce youngsters to snap and upload geotagged photos of critical infrastructure, military and civilian".<sup>14</sup> The Israel Palestine conflict also saw an AI based innovation for operations by the Israeli Air Force. "During the recent conflict, massive AI machinery for Big Data Analytics provided support at every level- from raw data collection and interception, data research and analysis, right up to strategic planning- with the objective of enhancing and accelerating the entire process, from decision-making about prospective targets to the actual carrying out of attacks by pilots from F 35 cockpits".<sup>15</sup> Military leaders need to develop a close understanding of technology accordingly.

### **How do Emerging Technologies and Concepts Shape Warfare**

So, will emerging technologies then shape warfare further?" As an equal-opportunity enabler, technology will enhance the abilities of all participants in a conflict to do more, which means more messaging and content from all sides, greater use of robots and cyber weapon, and a wider range of strategic targets to strike".<sup>16</sup> We have noticed how some key technologies that have been developed for use in drones/UAS, loitering munitions, precision weapons, satellites, space weapons, communication and jamming equipment, rocket and missile systems are redefining warfare.

There are a number of disruptive ones too that are likely to impact warfare in the future, with some at various stages of development or induction. Robotics, autonomous unmanned systems, stealth materials, nanotechnology solutions, additive manufacturing, synthetic biology, quantum computers and communications, once operationalised, will revolutionise weapon systems further and accelerate the pace of any conflict.

A robust scientific culture has greatly benefited Western advancements in technologies and consequently their speedy assimilation in weapon systems. AI has already been employed gainfully to increase the speed and scale of operations. It is likely to see many more forms as we go ahead. “We are entering a new era. I call it the ‘Singularity’. It’s a merger between human intelligence and machine intelligence and is going to create something bigger than itself”.<sup>17</sup> Intelligence augmentation promises to be quite a game-changer for decision-making.

Russian (Maj Gen Vladimir Slipchenko) military thoughts on harnessing technology in the information age have been significant. “Superiority over an enemy will be achieved through an advantage in the acquisition of various types of information, mobility, and rapidity of reaction; and in precise fire and information effects in real time against numerous structures of his economy, military objectives with the minimum possible risk for one’s own forces and means”.<sup>18</sup> The present war will shape and refine everyone’s thoughts further.

China too appears to have gained from their strategy of Military-Civil Fusion, as they are moving meaningfully towards their goal of prosecuting ‘intelligentised’ warfare. “Furthermore, when China enters the phase of intelligentised warfare, it will have created a command system that integrates humans and machinery, in which artificial intelligence and game theory will be utilised to analyse and determine the opponent’s intentions”.<sup>19</sup>

Another interesting phenomenon taking place is the role played by big technology companies in modern wars. “Technology companies ranging from Microsoft to Silicon Valley startups have provided cyber-defense, surveillance, and reconnaissance services—not by direction of a government contract or even as a part of a government plan but instead through the independent decision-making of individual companies”.<sup>20</sup> Social media is being

used by netizens for information warfare which at times may be crowd-funded. Such issues would need to be catered for, by those planning national security.

The progress in technologies is making weapon systems complex and formidable. Their impact against an enemy's aggregation of troops and weapon platforms can be devastating, prompting changes in military force design and application. To achieve a combat edge, smaller entities, reduced signatures, distributed disposition and the ability to converge/disperse swiftly will be attributes of any future force, entailing a doctrinal shift.

### **Where are we Placed**

“India will aim to become a developed nation within 25 years, Prime Minister Narendra Modi said ...., with policies to support domestic production in power, defence and digital technology”.<sup>21</sup> While other progressive developments such as better health, education, infrastructure, jobs, per capita income are being attempted, it would be prudent to greatly augment the defence sector, given our enduring security threats. As our Ex-President, Prof APJ Abdul Kalam once described “The confluence of civilian and defence technologies is leading to a situation where most new technologies are basically ‘dual use’ in nature”.<sup>22</sup> Hence technology must be developed to not only drive all growth indices but also to strengthen national security.

The Indian Armed Forces have always aspired to acquire weapon systems with emerging/disruptive technologies. “To prosecute a future war, it is necessary to build infrastructure that ensures the ubiquitous and seamless connectivity of all sensors and shooters in a particular theatre, both airborne and on the surface”.<sup>23</sup> The quest for a technological edge goes on. “Systems at the drawing board stage will have to be even more futuristic if they have to be around at the turn of the next century. This calls for a truly transformative approach with a dynamic interplay between doctrine and technology so that the armed forces get what they need and do not have to adapt to what is available by default”.<sup>24</sup> In its own interest our military must participate in development of defence technologies and nudge doctrinal changes. Further, being agile and adaptive will definitely pay rich dividends.

New technologies invariably affect military capabilities and change the operating environment at all levels of warfare. So, how does one plan for the future? In 2015 the Technology Information, Forecasting and Assessment Council (TIFAC) produced its Technology Vision (TV) 2035 document, following up on lessons learned from the previous TV 2020 document. It clearly articulated five segments of technology that define our capabilities and constraints. The armed forces on their part have identified technology requirements in Technology Perspective and Capability Roadmap (TPCR) 2018 as a sequel to the TPCR 2013 document. The Defence AI Council is tasked for the development of AI for armed forces. The Army has an Army Design Bureau, AI Centre and Quantum Lab, the Navy has the Naval Technology Acceleration Council (NTAC) and the Air Force a Directorate of Aerospace Design. But obviously, much more needs to be done comprehensively.

### **The Way Ahead**

Can we attempt more going ahead? At the apex, a cogent technology review must be undertaken and a concomitant defence technology strategy devised. The defence industrial base needs suitable expansion, building on existing defence (scientific and technological) clusters that include institutes and laboratories. The designated defence industrial corridors could focus on specific weapon systems and the attendant ecosphere. Till now defence R&D was primarily confined to the DRDO and defence PSUs. But with the recent provision of 25 per cent annual R&D budget for projects spearheaded by start-ups and private companies, a pool of wider talent that innovates should merge. Private industry will also need to put in much more for R&D to develop weapons of world class standards. One way to proceed further is that DRDO and DPSUs focus on weapon platforms which involve critical and strategic technologies, while the private industry concentrates on those that are commonly used. Start-ups and defence MSMEs could support both segments.

With the new CDS steering jointmanship and integration to fight future wars, customised ways of assimilating new technologies can be found. Joint doctrines and training methods will need to be crafted as force structures are altered to exploit technologies at strategic, operational and tactical levels. A 'Whole of Nation'

approach for a technology development strategy becomes imperative. From the armed forces, a clear integrated roadmap to acquisition and capability development for the coming decade(s) is called for.

### **Conclusion**

Warfare is constantly evolving. Recent wars have exhibited the imaginative use of emerging technologies by various militaries. Commercial grade technologies are proliferating and getting better by the day. Hard-core scientists and technologists will develop usable technologies but militaries remain responsible to assess, adapt and be innovative in their use to keep up their combat edge. While all endeavours should be made to prevent wars, strategic and military leaders must closely observe the impact of technologies on warfare and be prepared to deal with paradigm shifts that are taking place. Only then can we secure our nation robustly.

### **Endnotes**

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# India's Foreign Policy in Evolving Geopolitical Scenario

Major General BK Sharma (Retd)<sup>®</sup>

## Abstract

*At a juncture, when a buoyant India is well on its transition from a balancing power to a leading power, unprecedented geopolitical developments are unravelling at a fast pace in our strategic neighbourhood and beyond. The three strategic shocks viz, COVID pandemic, Talibanisation of Afghanistan, and Ukraine crisis have impacted globalisation and the world order, with ramifications for India.*

## Introduction

The ensuing strategic environment is characterised by Volatility, Uncertainty, Complexity and Ambiguity (VUCA). There is a new 'Great Game' in manifest in Eurasia and the Indo Pacific, with risks of its expansion to other strategic frontiers such as Arctic Region, technology, trade, cyber space, outer space, and cognitive space. We are witnessing a growing trend of multi-domain warfare that combines politics, economy, diplomacy, military, technology, and other elements of national power; multitude of means; state players, non-state actors, military and non-military, linear and non-linear, kinetic and non-kinetic. They are applied seamlessly across the spectrum of conflict and up the escalation ladder. The lines between classic state to state wars and peace are blurred by grey zone conflicts. In the spiralling contestation, we see revamping of the US led Euro-Atlantic alliance, NATO, East Asian security alliance, QUAD and AUKUS on one hand, and China and Russia strategic embrace on the other. It has put middle level and small powers on the horns of dilemma, causing them to hedge, align, and rebalance their strategic interest vis-a-vis, the contending behemoths. Ironically, international institutions, particularly the UNSC, have become virtually dysfunctional in conflict prevention

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and management. Historical animosities, conflicting core interests, presence of volatile flash points, dangerous military posturing amid deepening strategic mistrust and the lack of conflict prevention mechanisms collectively heighten the chances of military confrontation at the peril of global peace.

India's strategic security environment too is in ferment. It continues to face collusive hybrid threats from Pak-China nexus and mounting politico-economic instability in South Asia. The evolving strategic scenario demands a more nuanced and sophisticated understanding of strategic environment and its impact on India's national strategy and foreign policy. India ought to be a pre-eminent player in its strategic neighbourhood and a major stakeholder in shaping geopolitical developments in Eurasia and Indo-Pacific Regions.

### **India's Vision**

India strives to be staunchly sovereign, diplomatically autonomous, economically strong, socially cohesive, militarily powerful, culturally vibrant, at the forefront of science and technology, pragmatic & influential in international relations, confident and satisfied society in pursuit of dignified peace & tranquility in a multipolar world. At the heart of India's national interests lie the well-being of its citizens, national image, and influence. For accomplishing these lofty goals, it is paramount to develop Comprehensive National Power (CNP) and configure it to promote national interests. However, India's comprehensive national development is predicated on a stable strategic environment. Therefore, the principal goal of India's foreign policy is to successfully navigate the complex strategic environment in the quest of positioning India at a prominent place in the comity of nations.

### **Strategic Horizon Scan**

From a realpolitik perspective, India recognises that behavior of states will continue to be driven by social Darwinism, where there are no permanent friends or foes. Only national interests, survival of the fittest paradigm, and balance of power will rule the roost with a looming risk of falling into Thucydides' trap. We are living in a world where 'Pax Americana' has lost its sheen; gone are the days of unipolarity, preemption and American universalism. We are witnessing the rise of China, resurgence of Russia in

Eurasia and growth of middle level powers like India. The contours of new diffused and poly-centric world order are becoming dark. Black Swan of Covid pandemic has impacted the momentum of globalisation, disrupted supply chains, induced economic shocks, and caused a fortress mentality in nation states. The US debacle in Afghanistan led to victory of jihadi ideology and impacted balance of power in Eurasia. The Ukraine conflict has deepened the chasm between the US led west and the Russia-China strategic alignment, further on the other hand, impacting the balance of power in Eurasia and Indo-Pacific. The ensuing Cold War or strategic brinkmanship is characterised by the following attributes:

- There is contestation over ideology between liberal democratic world vis-a'-vis other models of governance. Powerful states are vying for domination of locations in the Indo-Pacific, Eurasia, Arctic, outer space, cyber space and cognitive space, monopolises resources such as energy, water, food, rare-earth metals, semiconductors, and microchips; using these as tools of strategic coercion.
- Contestation over technology such as Artificial Intelligence, 5G/6G, cyber, big data, block chains, robotics, autonomous vehicles, hyper velocity vehicles, space and counter space technologies.
- Weaponisation of economy by the US and European Union has disrupted global financial system leading to rise of inflation, food crisis, creation of alternate economic blocs, trading system, and diversification of manufacturing hubs and supply chains.
- Multi – Domain wars and grey zone conflicts have become a new normal with lines between declared and undeclared wars becoming amorphous, thus, compounding security-insecurity dilemmas.
- Arms race, forward military posturing and dangerous maneuvers are fraught with risks of accidental flare ups exacerbated by strategic mistrust and hyper nationalism. A series of miscalculations or propensity to up the ante in Ukraine conflict is fraught with risks of nuclear brinkmanship. Likewise, Taiwan is fast emerging as the most volatile flashpoint between the US and China, with potential for

escalating into a major war that will engulf other countries and damage global peace and security.

- The Arctic Region, due to its abundant natural resources, has emerged as a new strategic frontier.<sup>1</sup> With the melting of ice, harnessing of energy resources and minerals, operationalisation of the Northern Sea Route has become a reality. The strategic geography of Arctic puts Russia in a dominating position as an anchor of Arctic outreach. China too proclaims itself as a Near Arctic State and is building its capacities to fructify Polar Silk Road and is collaborating with Russia for the commercialisation of Arctic resources. These developments are deemed inimical by the US led Western alliance. The Ukraine conflict has made the Arctic Council and other collaborative initiatives virtually defunct. On the contrary, the voices from US and NATO for expansion in the Arctic to balance are getting loud and shrill.

### **Tenets of India's Foreign Policy**

India's world-view is informed by the philosophy of '*Vasudhaiva Kutumbakam*'; a phrase found in ancient Sanskrit scripture implying that the world is a family. India, ipso-facto, is a strong exponent of globalisation and multilateralism. India, the 75 years since its independence, has embarked upon a mission of '*Viksit Bharat*' (Advanced India)- a cherished national rejuvenation mission to be achieved by the middle of 21<sup>st</sup> century.<sup>2</sup> It essentially entails attainment of CNP based on development, deterrence, diplomacy and strategic communication. Our strategic security and foreign policy goals are geared at upholding sovereignty, territorial integrity, socio-political stability, economic security, resource security, environmental security, technological self-reliance and credible defence capabilities. All these are to be achieved taking a 'whole of government approach' and building synergy between hard power, soft power, dispersed power (diaspora) and coordinated power-blending into sharp and smart power. The strategic guidelines articulated by Prime Minister Modi are demonstrated through slogans such as National Ambition and Regional Aspirations (NARA), '*Sabka Saath Sab ka Vikas and Sab ka Vishwas*'<sup>3</sup> (it means growth for all, taking all along and by taking in confidence) and SAGAR (Security and Growth for All in the Region). India aspires to develop into a 3 trillion-dollar economy in the next few years

and become self – reliant in technology through *Atamnirbhar* (Make in India) and Digital India programmes. India seeks to diversify its energy and technology imports, achieve a carbon neutral status by 2070, and promote 'International Solar Alliance'. India firmly believes in strategic autonomy, practiced through multi-vector foreign policy, primacy of international institutions, their reforms; rule based international order, and multilateralism. India is against zero sum game, use of force, and hegemony. India has shed off its pacificism and has become explicit, and assertive, in articulating and protecting its core interests. Its foreign policy focus manifests in its Neighborhood First Policy, Connect Central Asia Policy, Look West Policy, Act East Policy, becoming an important vector in the concert of middle-level powers, thus, balancing its interests between the contesting big powers. India's participation in QUAD and at the same time being a member of G20, SCO, BRICS, RIC, and ASEAN plus constructs is indicative of its propensity for regional multilateralism.

### **Foreign Policy Challenges and Opportunities**

India's growth and development have been impacted by the Covid pandemic, inter alia due to lockdowns, disruption of supply chains, hike in fuel and food prices, impediment in trade and FDI. Despite these encumbrances, India ranks as the 5<sup>th</sup> largest economy in the world and has an impressive GDP growth of 6.5 to 7 percent.<sup>4</sup> However, to achieve the mark of 5 trillion US dollar economy, India has to grow at 9 percent or more.<sup>5</sup> Therefore, India needs to assiduously work to enhance its industrial output, boost its trade and ensure unimpeded energy imports. On the positive side, India's huge consumer market makes it a favourite for foreign countries.

The most formidable threat India faces today is from Pakistan-China strategic nexus that seeks to change status quo at the contested borders and undermine India's strategic security. China's aggressive actions, since May 2020, to change the status quo at the LAC have severely damaged Sino-Indian relations. Another area of concern for India is to balance China's forays in South Asia and the Indian Ocean Region. Under the rubric of China's much touted BRI, it is developing CPEC in Pakistan (through the Indian Territory in the Pakistan Occupied Kashmir), building China-Nepal Economic Corridor, China-Myanmar Economic Corridor, and

dual use infrastructure in the littorals of Indian Ocean. China, through its charm and cheque book diplomacy, seeks to induce a gravitational pull in India's strategic neighbourhood and alter the balance of power in its favour. The balancing of Pakistan-China collusion and China's growing influence in India's strategic neighbourhood poses a challenge but also offers opportunities for India to reinvigorate its ties with the neighbouring countries.

India's lack of direct geographical connectivity with Central Asia is complicated with the obstinacy of Pakistan, Talibanisation of Afghanistan, and geopolitics of Iran, owing to economic sanctions imposed on Tehran by Washington. These geopolitical developments have dampened the prospects of operationalisation of Chahbahar, Zaranj-Delaram axis, INSTC, energy corridors connecting Central Asia with South Asia or for that matter, implementation of Ashgabat trade agreement. There is a risk of Afghanistan becoming an epicentre of terrorism which will give a fillip to cross-border terrorism. Another challenge India faces is the extension of CPEC from Peshawar to Kabul and possible creation of Pakistan – China condominium in Afghanistan that would seek to marginalise India. On the positive side, there is some thaw in India and Taliban regime to establish a minimum functional relationship to render humanitarian assistance to Afghan people. India is assuming a centre stage in 'Troika plus dialogues' for building peace and security in Afghanistan. India is fully cognisant of the fact that given its economic heft, size of market, and IT prowess, New Delhi gains salience in the regional geo-economic integration.

India's strategic interests in West Asia evolve around energy security; India imports about 2/3rd of its energy requirements from the West Asian countries. Also, India must balance its interests between Israel, Saudi Arabia and Iran and checkmate Pakistan's nefarious agenda at the Organisation of Islamic Cooperation (OIC). Recently, India's relations with the UAE, Saudi Arabia, and other Gulf Cooperation Council (GCC) countries have significantly improved. Nonetheless, a new Islamic bloc that comprises Pakistan, Turkey, and Malaysia needs deft diplomatic handling. India also needs to take extra measures to balance growing influence of China in the region. India must be extra vigilant on the import of Wahabi ideology and radicalisation of Indian diaspora. India has joined a new West Asian (Quad)-US, UAE, Israel and India. This

grouping is essentially aimed at economic cooperation albeit with misgivings from some quarters which need to be allayed through diplomacy.

Another significant foreign policy challenge for India is to balance antagonistic big power relations. India's strategic autonomy precludes New Delhi to join any military alliance or strategic partnership that is inimical to another country or group of countries. Traditionally, the west has perceived India closer to Soviet Union / Russia. These perceptions are accentuated, with India actively participating in SCO, BRICS and RIC forum. The security dilemmas that are particularly stemming from Pak-China hybrid threats make it incumbent for India to resort to external balancing in the Indo-Pacific and to balance an assertive China. India's participation in QUAD, signing of foundational agreements with US, Japan, France, UK, and Indonesia should be seen from that perspective. It needs to be acknowledged that India is too huge country to fall under the tutelage of another country or be prompted in its strategic choices it makes in pursuance of its national interests.

The Eurasian heartland has recently witnessed unprecedented geopolitical developments that have impacted the balance of power in the region. Ensuing Ukraine conflict has plunged the world in the throes of heightened confrontation between the West on one side and Russia -China's strategic nexus on the other. India and Russia are endowed with a very robust and specialised privileged strategic partnership that has withstood the vagaries of geopolitics. Russia's embroilment in Ukraine has implications for India. India-Russia trade has crossed \$15bn since 2018.<sup>6</sup> Over 60 per cent of Indian military inventory is of Russian origin,<sup>7</sup> especially with respect to fighter jets, tanks, helicopters and submarines, while several major deals are in the pipeline. Russia's embroilment in Ukraine conflict and consequential economic sanctions imposed on Moscow will have implications on the procurement of \$5.43bn deal, S-400 air defence systems, modernisation of frigates, induction of nuclear-powered submarines, AK 202 assault rifle project, VeryShort-Range Defence Systems, spares for Brahmos, R-27 Air to Air Missiles, and modernisation of AN 32 transport aircraft fleet. Likewise, import of fossil fuels under Rupee-Rouble exchange may have attendant repercussions as far as India's western strategic partners are concerned. India and Russia need strategic patience and deftness in mitigating these challenges. India and Russia have crafted well-

defined areas of collaboration and adopted a well-coordinated approach, as enunciated in the 'Eastern Economic Forums' declarations, particularly those made on the eve of Mr. Modi's visit to Vladivostok,<sup>8</sup> and addresses delivered during annual forums 2019, 2021 & 2022 and President Putin's visit to India in December 2021. Mr. Modi has alluded Vladivostok as Sangam (confluence) of ideas, people and trade.<sup>9</sup> India's recently pronounced 'Act Far East Policy' and 'Arctic Strategy' are in sync with President Putin's strategy for development of Far East. Mr. Modi's speech at Eastern Economic Forum on 09 Sept 2022 is indicative of the same- *"India is keen to strengthen its partnership with Russia on Arctic issues. There is also immense potential for cooperation in the field of energy. Along with energy, India has also made significant investments in the Russian Far East in the areas of pharma and diamonds"* PM said.<sup>10</sup> In a welcome development, India has pledged a one billion dollar line of credit and espoused collaboration for the development of Far East.<sup>11</sup> Specific areas of collaboration are identified as under: -

- Expansion of bilateral trade to US \$30 bn US dollar by 2025, it being co-terminus with India's intent to grow into a 5 trillion US dollar economy in the next few years.
- Energy imports, off shore drilling, infrastructure development of ports, railways, and airports.
- Operationalisation of Northern Sea Route and its connectivity with India through Vladivostok-Chennai corridor on one side and through integrated waterways with INSTC in which Chabahar is sought to be included.<sup>12</sup> The most important decision is to make these routes as green corridors by easing out trade barriers and custom rules adopting e-commerce model.
- Collaboration in ship building, supply and construction of polar vessels.
- Russia's participation in *Atamirbhar Bharat* Initiative (self-reliant India).
- India – Russia Military Technical Cooperation 2021-2031 offers more promising prospects to boost defence cooperation<sup>13</sup> Defence trade between the two countries has crossed \$15bn since 2018.

- Arctic research and climate change and its impact on monsoons, global warming of the two cold regions in Himalayas. Sharing of Arctic knowledge of indigenous communities living in the two cold regions.
- India's assistance in terms of provision of skilled manpower, maritime navigation and satellite mapping of the Arctic resources.
- Issues such as search and rescue and insurance of vessels.

### **Conclusion**

India is at the cusp of transiting from a balancing to a leading power. It seeks a peaceful internal and external security environment for its comprehensive development. However, the evolving geopolitical scenario that is rife with contestation and mistrust poses strategic and foreign policy dilemmas for India. However, India has to develop her CNP and strategically configure it to promote its sharply defined national interests. India needs multi-vector engagement with strategic partners across the geopolitical divide. India's foreign policy has to be nimble-footed to steer its interests through the choppy waters of VUCA environment. As far as Indo-Russia relationship is concerned, the history bears testimony to the fact that our bilateral relations have stood the test of time. The two countries have traditionally remained aligned in their world-view and macro-strategic issues. The decision to collaborate in the development of Russia's Far East opens a new avenue to deepen and broaden our privileged partnership. The two sides are well poised to strengthen bilateral relations and align their positions at the multiple fora such as G-20 UNGC, SCO, BRICS and such other platforms. Our dialogue process must remain dynamic and progressive to reconcile divergences, mitigate risks and maximise opportunities.

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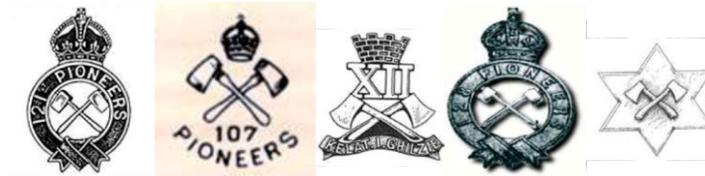
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# The Corps of Bombay Pioneers

Colonel Harjeet Singh (Retd)<sup>®</sup>

## Abstract

*There were five Bombay pioneer regiments in existence prior to 1922, when they were re-designated and merged into the 2nd Bombay Pioneers that year. They were renamed The Corps of Bombay Pioneers in 1929, and were disbanded for reasons of economy in 1933. They were looked upon as energetic helpers in large projects and as brave fighters when occasion demanded that the shovel be abandoned for the rifle. Their history is a chequered one, worthy of the prominent role the pioneer regiments played in several campaigns.*



## Introduction

On 10 February 1933 all the Pioneers of the Indian Army were disbanded. As a prelude to this history of the battalions from which the Corps of Bombay Pioneers was formed, it may be well to describe what was implied by the name of 'Pioneers'. The dictionary definition of a pioneer as 'one that goes before to clear the way' gives a good description of the original idea of their special work. They were required for operations in undeveloped regions where few roads existed or were passable for an army, and where road making had to be done in proximity to an enemy. They were also always available and ready to be used as infantry.

In the 'Orders of Battle' of the armies which fought in India in the eighteenth century, there often appears the name Pioneers. They were the parent units of the present Corps of Sappers and

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Miners, and none of the battalions of the Bombay Pioneers can claim direct lineage from them. The history of the Corps of Bombay Pioneers is in reality a history of five different regiments, which eventually became Pioneer Battalions. Prior to 1888 the Bombay Army had no Pioneers units, but campaign after campaign proved that no force could be complete without a Pioneer Regiment in its composition. In 1888, the 28th Bombay Infantry became the 28th (Pioneer) Regiment of Bombay Infantry, on the model of the already existing Madras and Punjab Pioneer regiments, and was the first unit of this kind in the Bombay Army. They were soldiers who, with tools and training, carried out field engineering tasks and assisted in the construction of roads and tracks.

The Corps of Bombay Pioneers consisted of a Corps Headquarters and two active battalions, named the 1st (Marine) Battalion and the 2nd (Kelat-i-Ghilzie) Battalion, Bombay Pioneers. This Corps was formed in 1929 by merging the 1st, 2nd, 3rd and 10th Battalions, 2nd Bombay Pioneers in such a way that each of the new unit would contain an equal number of officers and men from each of the old battalions. This not only helped in avoiding the disbandment of any battalion, but also none of the new units could claim to be exclusively descended from any one battalion of the former organisation. The names given at the time they were raised, and changed in 1903, when Lord Kitchener was Commander-in-Chief in India, are:

<b>Original Name</b>	<b>Name in 1903</b>
3rd Regiment of Bengal Infantry, 12th Pioneers	Shah Shuja's Force (The Kelat-i-Ghilzie Regiment)
48th Regiment of Bengal Infantry 4th Battalion of Bombay Sepoys	48th Pioneers (Pioneers) 107th Pioneers
The Marine Battalion 28th Regiment of Bombay Native	121st Pioneers 128th Pioneers Infantry

### **The History of Each of the Five Battalions**

#### **121st Pioneers (The Marine Battalion)**

It was necessary for the English to defeat the Portuguese Navy before they could secure a firm foothold in India. This they

did at Swally in 1615. A small force of grabs and gallivants, which had been raised by the Agent of the Honourable East India Company at Surat, assisted at this important victory. (Grabs were ships up to 300 tons, having from one to three masts, and armed with 6, 9 or 10-pound guns. Gallivants were vessels up to 70 tons, propelled by oars, and carrying 2 or 4 pounder guns). This was the start of what came to be known as the Bombay Marine, and in 1830 as His Majesty's Indian Navy.

In 1661 King Charles II, on his marriage to Catherine of Braganza, came into possession of Bombay, which he leased, in 1668, to the East India Company for £10 a year. On account of its splendid harbour, Bombay soon superseded Surat as the base for the fleet.

Up to 1777, small detachments from the Bombay troops were often employed as marines. The British then decided on the raising of a Marine Battalion especially for this duty, and this battalion eventually became as the 121st Pioneers. When the Bombay Army was reorganised in 1796, the Marine Battalion was increased to ten companies. In times of peace, the duties of the Bombay Marine were:-

- Protection of trade.
- Suppression of piracy.
- Convoying transports and conveying troops.
- Maritime surveys.
- Assisting merchantmen in the monsoon.

In 1779, a Grenadier Battalion (later 101st Grenadiers) was formed of personnel from six companies of Bombay Sepoys and from two companies of the Marine Battalion. In January 1818, the Battalion was formed into a regular Regiment and designated as the 11th Regiment Native Infantry, of which, the 1st Battalion consisted of the former Marine Battalion. The 1st Battalion was called the 1st (or Marine) Battalion, 11th Regiment of Bombay Native Infantry, but the 2nd Battalion was not a Marine Battalion.

During 1824-26, the Bombay Marine played an important part in the first Burmese War. In 1827, some of its ships blocked Berbera. Its sphere of action included the African coast from

Madagascar northwards, the Red Sea, the Persian Gulf, the Indian Ocean, the Bay of Bengal, the Irrawaddy, the Malay Archipelago, the China seas and the Australian coast. It must be remembered that piracy was rampant in the Indian Ocean at the time.

When the system of regiments of two battalions was discontinued in 1824, the Battalion became the 121st Pioneers or Marine Battalion, and later in the same year it was again designated simply The Marine Battalion. It continued to be called so until 1861, when it was designated the 121st Regiment of Bombay Native Infantry (The Marine Battalion).

In 1862, King Theodore II of Abyssinia made a request to the British for munitions and military experts. He thought that expertise from the British could help his rule. However, the British Foreign Office completely ignored his request. This did not please the King and he was further infuriated when he found out that the British Consul, Captain Charles Cameron, had just returned back to Abyssinia after a visit to neighbouring Egypt, a country that the King considered to be one of his enemies. Exasperated by this antipathy of the British, King Theodore held Captain Cameron, and others, as hostages until he received a reply to his letter.

To secure the release of the hostages, Sir Robert Napier was appointed Commander of the expeditionary force which landed in Abyssinia, marched deep into the interior of the country on a 400-mile trek, kept its supply lines open and fought and won a battle at the mountain fortress of Magdala. The force comprising British and Indian regiments included the 121st Battalion Pioneers (Marine) and 12th Kelat-i-Ghilzie Regiment. It took almost three months for it to reach Magdala which was surrounded and later torched. King Theodore committed suicide. The battle honour 'Abyssinia' was awarded for the forces who participated in this expedition.

The 121st Battalion Pioneers was moved to Poona in 1904. However, for a period of 127 years, the headquarters of The Marine Battalion was continuously stationed in Bombay. In 1796, the Battalion took possession of the new cantonment at Colaba, in Bombay, which had been built for it. These 'Lines' were destroyed by fire in 1812, 1820 and 1829. Subsequently, permanent barracks were erected at the site now known as Marine Lines.

### **107th Pioneers**

In the account of the raising of the battalions, the 107th Pioneers took priority over the 121st Pioneers on parade by virtue of the date of it becoming a regular regiment.

Till 1768, the organisation of the East India Company's native troops in Bombay had been by companies known by the names of the officers commanding them. In 1768, these companies were formed into two battalions, the 1st and 2nd Battalion of Bombay Sepoys respectively. By 1780, there were fifteen battalions, exclusive of the Marine Battalion, in the Bombay Army. In 1784, the Bombay Native Army was reorganised and formed into eight battalions plus the Grenadier and the Marine Battalions. Two of these eight battalions were disbanded shortly after.

When the peace with Tipu Sultan did not last, it was necessary to increase the strength of the Bombay Army again. The existing seven battalions were increased to twelve battalions, the Marine Battalion being left alone. Of the new battalions, formed in 1788, the 4th Battalion of Bombay Sepoys eventually became the 107th Pioneers; and claimed descent from the original 2nd Battalion of Bombay Sepoys raised in 1768. It remained in Bombay till 1790. In the following year, it embarked for Tellicherry for field service in Mysore. The regiment's first action was in the Third Anglo-Mysore War. It also took part in the Fourth Anglo-Mysore War being at the two major battles, Seedaseer and Seringapatam.

In 1796, the Bombay Army was again reorganised and formed into four regiments. This system of regiments, each of two battalions, was discontinued in 1824, the battalions being disconnected and renumbered. Thus, the 1st Battalion 4th Regiment became the 7th Regiment of Bombay Native Infantry.

Rampant piracy in Eastern Arabia and the Persian Gulf Region led the East India Company to carry out a punitive expedition in 1819 to Ras al Khaimah to destroy the pirate base and remove the threat from the Persian Gulf. The expedition sailed from Bombay in October 1820 to Sur via Muscat where they landed. The small force proceeded inland to Balad Bani bu Hasan, the tribal capital, where it was attacked and almost annihilated. This was a major blow to British prestige in Arabia and a second stronger expedition was assembled. This force contained elements

of the Bombay Presidency Army, 121st Battalion Pioneers (Marine) and also the Kelat-i-Ghilzie Regiment. The force disembarked at Sur on 27 January and marched into the interior. Repulsing an attack on 10 February, they reached Balad Bani boo Hassan on 02 March. The Arabs fought bravely but the Beni boo Ali tribe were beaten, leaving behind 500 dead and many wounded. The fort at Balad was occupied after a brief bombardment. Later, the expedition returned to Sur where they embarked for Bombay. All units which served in the expedition were awarded the battle honour 'Beni Boo Ali'.

The name of the Battalion was changed in June 1900, whilst it was stationed at Fort Pishin, near Quetta, when orders were received for its conversion into Pioneers, with the name of the 7th Bombay Infantry (Pioneers). In 1903, it became the 107th Pioneers. Soon after their conversion to Pioneers, they were part of the force sent to Somaliland for the subjugation of the 'mad mullah' in 1903. They arrived at Berbera in December and had to march to Mudag. There were no roads and water was scarce. Transport was by camel and the route was via the Sheikh Pass at a height of 4,600 feet on the Golis Range, which involved a steep climb over a route that had thick thorny scrub. The Regiment was involved in road construction. They returned to India in November 1904. The 107th Pioneers received orders on 09 August 1914 to mobilise as Divisional troops of the 7th (Meerut) Division. Embarking from Bombay on 02 September, they reached Marseilles on 26 September. They were rushed to the front lines at Calonne and Festubert in October, where the shortage of infantry made it necessary to use them as infantry with the Bareilly Brigade. Their trenches were just 120 yards from the German positions and they saw action immediately on arrival. They were relieved after a month of action.

January 1915 saw the Battalion involved in building breast works and revetments in the area of Neuve Chapelle. This was a difficult task as most of the trenches were water-logged. After the miserable winter, the next major action was at Neuve Chapelle on 23-24 March 1915. It was the first large scale organised attack undertaken by the British Army during the war. The night before the attack was wet, with light snow, which turned to damp mist on 10 March. Three infantry brigades were ordered to advance quickly as soon as the barrage lifted from the front line at 8.05am. The

Garhwal Brigade, with which the 107th Pioneers were grouped, advanced successfully, with the exception of the 1/39th Garhwal Rifles on the extreme right that went astray and plunged into defences untouched by the bombardment, suffering large losses. There were delays in sending further orders and reinforcements forward, but by, nightfall, the village had been captured. During the night the Germans reinforced their second line in front of the Bois de Biez, and all further attempts over the next few days brought little material success. The 107th Pioneers had 13 killed and 67 wounded in the fighting.

Their next action was at the Battle of Loos from 25 September. The task allotted to the 107th Pioneers, was to connect up the front line with the German trenches, after they were captured. They got orders to advance to the German trenches which had only been partially captured, making their task very difficult. They were then re-deployed at Neuve Chapelle till November, when the Indian Corps was moved from France to the Middle East.

The 107th Pioneers arrived in Mesopotamia on 04 December 1915, along with the 128th Pioneers as part of the force launched for the relief of Kut-al-Amara with the 7th Division. As large areas of the Tigris River had floods, they were involved in making bunds. This work was mainly done under constant enemy sniping. They saw fighting at The Dujaila Redoubt and then at Saniyat in April 1916. The effort to reach Kut-al-Amara was to no avail as the garrison, of which the 48th Pioneers were part, surrendered on 29 April 1916. The 48th Pioneers had no officers left with it. Of the 300 men captured, only 90 returned from captivity.

The 107th Pioneers returned to Quetta and were relieved by the 121st Pioneers in September 1916. The 12th (Khelat-i-Ghilzie) Pioneers also moved into the theatre while the 48th Pioneers were raised anew. (A second battalion was raised in place of the captured regiment but took its number. When the Kut prisoners were released at the conclusion of the war, the personnel still fit for service joined this re-formed battalion). The pioneers were kept busy during the campaign in making the railway, preparing the roads, constructing flood bunds and improving the communications for the advance to Baghdad and beyond, mostly under enemy fire, for the rest of the campaign. After World War I, the Indian Government reformed the army, moving from single

battalion regiments to multi-battalion regiments. In 1922, the 107th Pioneers became the 1st Battalion 2nd Bombay Pioneers.

### **12th Pioneers (The Kelat-i-Ghilzie Regiment)**

In 1838, internal troubles in Afghanistan, the fear of the spread of Russian influence, and the threat of an invasion by Persia compelled the British Government to establish their nominee Shuja-ul-Mulk as Amir of Kabul so that a buffer state would exist between British India till the potential danger posed by Russia and Persia attenuated. Shuja-ul-Mulk who had spent the previous 30 years in exile in Ludhiana entered Afghanistan with his own troops and six regiments of infantry, which were recruited for him. One of the regiments of this army was the 3rd Regiment of Infantry, the forbearer of the 12th Pioneers, which had been raised at Ludhiana.

Shah Shuja was installed as ruler and Dost Mohammed, his rival, fled. The 3rd Regiment proved themselves to be a useful unit for mountain fighting and were posted to a partially ruined fort called Kelat-i-Ghilzie which lay between Ghazni and Kandahar. The murder of the British envoy provoked an evacuation of the British garrison, most of which was massacred on its march back to India. The British forces in Afghanistan were for a short while confined to the fort of Khelat-i-Ghilzie and the garrison of Jalalabad.

Shah Shuja was murdered in April 1842 and Ghazni was captured bringing about the release of Afghan troops and tribesmen. Kelat-i-Ghilzie was besieged for several months. The 600 men of the 3rd Regiment along with 250 of the 43rd Regiment and about 40 British artillerymen, all commanded by Captain Craigie of the 3rd Regiment, repulsed the attacks of some 6,000 Afghans. Amazingly there were no fatalities amongst the defenders, only 4 men from the 3rd and 2 from the 43rd were wounded. Khelat-i-Ghilzie withstood an even longer siege than Jalalabad, holding out for four months before its eventual relief in the campaign that restored British control in the area.

The particularly dogged defence by the Shah's own Afghan contingent caused them to be enrolled thereafter in the British forces as the Khelat-al-Gilzie Regiment, otherwise listed as the 2nd Battalion of the 2nd Bombay Pioneers which was incorporated into the Bengal Army under a General Order dated 04 October 1842. All ranks present within Kelat-i-Ghilzie were presented a

silver medal bearing a mural crown with the superscription of 'Kelat-i-Ghilzie', and on the reverse the word INVICTA 1842. The regimental colour of the Regiment was composed of the three colours of the military ribbon of India, and in the centre was inscribed the word 'Kelat-i-Ghilzie'. For its services, the Kelat-i-Ghilzie Regiment was awarded the Battle Honour 'Ghazni, 1839'.

The 3rd Regiment was taken on to the strength of the Bengal Army as an extra regiment with the name of the fort it defended as its own name for its heroic efforts. When the Bengal Army was reorganised after the Mutiny, the Kelat-i-Ghilzie was brought into the Bombay Army on 03 May 1861, and numbered the 13th. In October of the same year, this numbering was altered and it became the 12th Regiment of Bengal Native Infantry with (Kelat-i-Ghilzie) being added after the number in 1864. On 03 March 1903, it was reconstituted as Pioneers and became the 12th Bengal Pioneers. On 31 July of the same year, its name was again changed to the 12th Pioneers (The Kelat-i-Ghilzie Regiment).

In 1897, there was a violent uprising of tribes on the North West Frontier, which led to operations in the Mohmand and Tirah. In the force which marched on the expedition were the 12th (Kelat-i-Ghilzie) Bengal Infantry and 28th (Pioneer) Regiment of Bombay Infantry. The 12th (Kelat-i-Ghilzie) Bengal Infantry operated in the Kurram valley till January 1898. The 28th (Pioneer) Regiment of Bombay Infantry operated in the area of Ali Masjid and the Khyber Pass as part of the Tirah Field Force. They saw action against the recalcitrant Mohmand tribes till April 1898.

The 12th (Kelat-i-Ghilzie) Pioneers remained in India throughout World War I, though it sent many officers and large drafts of men to other battalions in France and Mesopotamia. They, however, saw action against the Mahsuds in Waziristan during 1919. After World War I, it became the 2nd Battalion 2nd Bombay Pioneers stationed at Kirkee. The disbandment of the Bombay Pioneers was a protracted affair starting in 1926 with the 4th battalion and ending on 10 February 1933 when the other three Pioneer regiments were struck off the strength of the Indian Army.

### **128th Pioneers**

When the Bengal Army objected to serve in the newly-conquered territory of Sind and was on the verge of mutiny, it was decided

to provide this garrison from the Bombay Army. This made it necessary to increase the number of Bombay troops and three regiments of Bombay Native Infantry were raised in addition to the existing twenty-six regiments. The 28th Regiment of Bombay Native Infantry was raised at Ahmednagar on 21 January 1846. On 01 March 1888, the Battalion was converted into Pioneers under the name of 28th (Pioneer) Regiment of Bombay Native Infantry. The Regiment thus became the first Pioneer Battalion in the Bombay Army.

On 10 February 1885, the 28th Bombay Infantry were ordered to proceed to Suakin, on the Red Sea coast of Sudan, after the defeat of the British expeditionary force under Gen Charles Gordon. From Suakin, the force marched towards Khartoum on 22 March when it decided to halt at a small open space in the scrub known as Tofrek. Here it constructed defensive positions of scrub bushes, called 'zeribas'. The defences came under a determined surprise attack by the Arabs. The 28th Bombay Infantry were deployed in an area where the scrub was thicker than elsewhere giving absolute cover to the Arabs and fought back tenaciously. In half an hour they fired 22,500 rounds from their snider rifles, some of the men's hands being burnt by the rifles becoming so hot from firing. The enemy were beaten back leaving 1,500 dead. They then returned to Suakin where they remained till withdrawn to Bombay in October 1885. They were awarded the battle honours of 'Tofrek' and 'Suakin'.

The 128th Pioneers were mobilised in October 1914 and sent to the Suez Canal to prepare the canal defences between Lake Timsah and the Great Bitter Lake. They saw action against the Turks when their posts were attacked on 02-03 February 1915. The attacks were beaten back and two years lapsed before they saw action again.

The 121st Pioneers disembarked at Suez on 15 January 1918 and were immediately put to work on making embankments, bridges and culverts to join up the railway from Rafa to Beersheba in Palestine. Northwards of this, they saw action when their parties were attacked during the work to extend the railway through the Jordan valley.

Meanwhile, the second battalion to all single-battalion pioneer regiments were raised and most saw action in Palestine. The

2/107th Pioneers saw much action in the advance to Tulkarm and Megiddo during the summer months of 1918. Fighting and operations continued all through 1919. It was only in 1920 that most pioneer regiments returned to India.

The total casualties of the Bombay Pioneers during operations in Egypt and Palestine are difficult to estimate accurately owing to drafts having been received from and sent to other regiments. The figures published at the time of disbandment were: 23 officers and nearly 1,000 Indian ranks killed, and 22 officers and approximately 2,800 Indian ranks wounded.

### **48th Pioneers**

In March 1901, the 48th Regiment of Bengal Infantry (Pioneers) was raised at Lucknow, and later renamed as 48th Bengal Pioneers. This was the only one of the five battalions which was raised as Pioneers. In 1903, it became the 48th Pioneers.

The 48th Pioneers were the first to be ordered to Mesopotamia as part of the 6th (Poona) Division. Reaching Saniya on 14 November 1914, they were immediately involved in the fighting with the Turks while their baggage was lost during a gale which destroyed their boats. After the capture of Basra, they were involved in the defence of Shaiba. They next saw action in the capture of Kut-al-Amara, in June 1915 after which they were launched into battle at Ctesiphon where they lost 8 British officers, 9 Indian officers and 259 rank and file. They were then moved back to Kut-al-Amara to be part of the besieged force. The regiment was captured in its entirety at the Siege of Kut. A 2/48th Pioneers was reformed in Mesopotamia in May 1916 and attached to the 15 Indian Division. After World War I, when the army changed from single-battalion regiments to multi-battalion regiments, the 48th Pioneers became the 4th Battalion, 2nd Bombay Pioneers in 1921.

### **Conclusion**

The article in brief covered the journey of various Pioneer units of Indian Army over the period of time. It is pertinent to highlight that on 10 Feb 1933 all Pioneer of the Indian Army were disbanded.



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# India and Defence Exports: Prospects of India's Light Combat Aircraft (LCA) Tejas

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## Abstract

*Over the past seven decades, achieving strategic autonomy through increasing reliance on indigenous weapon systems for armed forces has been a primary and core aim of Indian defence industrialisation. However, with the maturing of India's indigenous defence manufacturing capabilities, India has also begun to look at defence exports. The Indian Government has set an ambitious defence export target of US\$ 5 billion or Rs. 35,000 crores by the year 2024. Serious pursuit of defence exports is critical for the long-term economic viability and continued sustainability of the country's defence industrial base, given its capital-intensive nature and requirement for continued research and development efforts with a long gestation period.*

*The article underlines the capabilities of the Tejas aircraft as compared to its competitors and flags the strengths of the aircraft which could help it emerge as a major success story for Indian arms exports in the coming years, provided it is able to overcome the drawback of relying on imported jet engines in the medium term.*

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## Introduction

Almost three decades after the introduction of India's first homemade fighter aircraft, HF-24 Marut, into the Indian Air Force (IAF) in April 1967, the Light Combat Aircraft (LCA) 'Tejas' successfully carried out its maiden flight in Bangalore on 04 January 2001, in the presence of the then Defence Minister Shri George Fernandes.<sup>1</sup> This event was a watershed in India's aerospace history, as the Indian aerospace industry successfully managed to indigenously design, develop, manufacture and successfully flight test a fighter aircraft with many major indigenously designed components and technologies. Fast-forwarding to the year 2022, a total of 123 jets have been ordered by IAF in different operational configurations; namely 20 Tejas aircraft in Initial Operational Configuration (IOC), 20 Tejas aircraft in Final Operational Configuration (FOC) and most importantly 83 Tejas aircraft in Mark 1A configuration.<sup>2</sup> In 2016, the first squadron of the LCA was officially inducted into the IAF, IOC, and was subsequently deployed at the Sullur air force base in Tamil Nadu.<sup>3</sup> In 2020, the second squadron was inducted, with FOC though it is yet to achieve its full squadron strength due to the disruption of the supply chain as a result of the Covid-19 pandemic.<sup>4</sup>

This was a major push for defence indigenisation and the Atmanirbharta program of the Indian Government as it was considered a catalyst for the Indian defence industry, mainly due to two reasons. Firstly, the first procurement of the Tejas fighter aircraft was made under the 'Buy (Indian-Indigenously Designed, Developed, and Manufactured)' category of the Indian Defence Procurement Procedure (DPP).<sup>5</sup> Secondly, the LCA Tejas project has incrementally been successful in establishing an aerospace ecosystem in the country with the involvement of over 500+ local Indian industries in the designing and manufacture of the aircraft and its various components.<sup>6</sup> Under the incremental approach, various upgrades like Beyond Visual Range missile capabilities, targeting pod, and Air to Air refuelling capabilities have been made to the baseline model to make the aircraft technologically advanced. Apart from this, the weapon integration and trials are undergoing on Mark 1 variant. In addition, the Defence Research and Development Organisation (DRDO), Aeronautical Development Agency (ADA), and HAL have started work on the fabrication of the

Mark 1A variant which will be technologically more advanced compared to its predecessor Mark 1 as a result of Active Electronically Scanned Array (AESA) radar, Electronic Warfare (EW) suite.<sup>7</sup>

The LCA program is being considered a major milestone for the Indian defence and aerospace industry in terms of achieving self-reliance in aircraft designing, developing, and manufacturing. It has played a pivotal role in creating an ecosystem in the aerospace sector in the country. However, for India to build upon and sustain this capability, it must employ the benefit of economies of scale, and ramping up defence exports is the best way of achieving this. However, achieving self-reliance in defence or critical technologies can't be the sole aim of any defence industry. In order to leverage such a capability for a country's economic, diplomatic, and scientific gains, pushing defence exports is essential. It is this realisation that has led to the government's push for defence exports in a big way.

### **Importance of Pursuing Defence Exports**

The development of indigenous weapon systems, especially high-end and complex systems like the development of fighter aircraft, has opportunity costs. The fighter aircraft development programs require a large upfront capital for setting up production, and testing facilities, in addition to training human resources, establishing a reliable and robust supply chain in addition to certification and validation regimes. A case in point is the development of the fifth-generation F-35 fighter for which the United States (US) has spent around US\$1 to US\$1.5 trillion.<sup>8</sup> Similarly, the development of Eurofighter Typhoon aircraft also required an investment of around Euros 18 billion.<sup>9</sup>

Many countries across the globe look at defence exports to support, or even partially recover, the huge investments into defence research and development programs. This is necessary for keeping their R&D programs afloat and making continued investments for future projects. From the point of view of arms manufacturers, defence exports are essential to ensure the survival of the defence industrial eco-system, namely the optimum utilisation of the production facilities, trained human resources, and supply chains. In addition, defence exports are also important for

employment generation, fostering continued scientific research into cutting-edge areas and technologies. From a country's perspective, defence exports also allow a country to leverage its defence production capabilities to strengthen its diplomatic position at the international stage.

Defence exports will play a critical role in shaping the future of the Indian defence industrial base. The Government of India has set an export target worth US\$5 billion (INR 35,000 crores) by 2024; the defence aerospace sector can contribute greatly in meeting this ambitious target.<sup>10</sup> Over the years, the Indian defence and aerospace industry has evolved manifold and has gained significant technological capabilities, either through indigenous R&D or by license manufacturing or co-development, which are presently being exported to various countries. India's Minister of State for Defence, Shri Shripad Naik has stated that India currently supplies defence hardware to 84 countries around the world.<sup>11</sup> At the moment, the nature of these exports is often in form of components, sub-components, structural assemblies, and, airframe modules. The defence exports from 2015 to 2020 have grown at a cumulative annual growth rate of 35 per cent from 2000 Cr to 9000 Cr.<sup>12</sup> This has resulted in India figuring for the first time in the global defence exporters list published by the Stockholm International Peace Research Institute (SIPRI) in 2020.<sup>13</sup>

To, meet the ambitious target of US\$5 billion by 2024, India needs to promote some big-ticket indigenous defence products such as fighter aircraft, light transport aircraft, trainers, helicopters, missile systems, radars, sonars, naval vessels etc. by identifying the potential markets for them.<sup>14</sup> Presently, Tejas is India's largest indigenous defence aerospace project and it has successfully demonstrated its capabilities to both national and international audiences by active participation in various national and international air shows.<sup>15</sup> The safety of the Tejas aircraft and the robustness of its development process is also attested by the fact that since its first flight in 2001, it has flown over 4,985 test flights without a single crash.<sup>16</sup> Further, the development of the LCA Tejas fighter aircraft has also demonstrated the capabilities of the Indian industries to undertake highly complex and high-end technology-based defence aerospace programs domestically. Therefore, it would be quite a sensible decision for the Indian

Government to promote the LCA Tejas as a frontrunner platform from an export point of view which will help India to break into the exclusive club of defence exporting countries.

### **Breaking into the Defence Export Club**

Given that the global market of LCA is dominated by some well-established players, it will be a challenging task for India's LCA Tejas to emerge as a prime contender. However, several countries reportedly have evinced interest in the Tejas which bodes well. It is important that the government plays to the Tejas's key strengths and gets to know the competition, to be successful in garnering export orders.

The two major competitors for Tejas are the South Korean FA-50 and Chinese JF-17 Thunder. These aircraft have proven credibilities as they have already been exported and have been inducted into their countries' air forces for some time. The following table elaborates how the LCA Tejas compares with its potential rival aircraft the FA-50 and the JF-17:

**Table 1 : Comparison of LCA Tejas, JF-17 and T-50/FA-50**

	LCA Tejas	JF-17	T-50/FA-50
Program commenced year	1983 (planning began for LCA) 1993 (funding received and project started)	1998	1997
Origin	India	Chinese (with Pakistan collaboration)	South Korea and the United States
Developer/Manufacturer	HAL	CAC - PAC	KAI-Lockheed Martin
First flight	2001	2003	2002/2011
Induction	2016	2007	2005/2013
Generation	4+	4	4
Role	Multi-role	Multi-role	Trainer/multi-role
Weapon integration	Derby Beyond Visual Range (BVR), R-73 and Python-5 air-to-air missiles. Tests going on for indigenous Astra air-to-air missiles. Russian, Israeli, and American weapons are also under trial, testing	Fully operationalized but limited to large Chinese and some Pakistani munitions	Fully operationalized but limited to American munitions, German/Swedish Taurus KEPD 350 ALCM is planned to integrate on FA-50.
Engine	GE-404-IN06 (US)	RD-93 (Russian)	GE-404-102 (US)
Total numbers operational	24 Mark 1 IOC & FOC.	120 Block 1&2.	49 T-50, 9 T-50B, 22 TA-50, 60 FA-50.
Current orders	83 Mark 1A	50 Block 3	NA
Exports	No orders yet	Myanmar, Nigeria	Iraq, Philippines, Thailand, Colombia
Variants	Mark 1, trainer, NP-1 (Naval Carrier version), Mark 1A, Mark 2	Block 1,2,3 A/B, and trainer,	T-50, T-50B, TA-50, FA-50.

**Abbreviations:** ALCM: Air-Launched Cruise Missile, CAC: Chengdu Aerospace Corporation, HAL: Hindustan Aeronautics Limited, PAC: Pakistan Aeronautical Complex, KAI: Korean Aerospace Industry.

**Source:** Compiled by the authors from various sources and own database.

### **Strengths of India's LCA Tejas over its Competitors**

**Reliability and Cost.** If one sees the entire equation from the perspective of a potential buyer, they would like to acquire the cheapest yet tried and tested platform. Given that the FA-50 and the JF-17 have been operating for a longer time, they seem to be ahead of the LCA Tejas. However, the Tejas' performance in international air shows for the past few years and the fact that it has not yet had a single crash despite close to 5,000 test flights is a testament to the aircraft's design and safety. In addition, the Tejas is also quite competitively priced as stated by the Tejas manufacturer, HAL chief, who claims that the LCA Tejas is the cheapest light combat aircraft available in the international.<sup>17</sup> This is primarily due to the high level of indigenisation and modularity and the line-replacement units (LRU) concept introduced by the DRDO during the design and development of the aircraft. However, once Tejas is integrated with an indigenous jet engine, the cost of aircraft would come down further, making it extremely competitive among price conscious customers in the global arms market.

**Weapons Package.** One of the important variables for comparing fighter aircraft is the weapons package that the aircraft carries. The Tejas LCA is armed with Derby Beyond Visual Range (BVR), R-73 and Python-5 air-to-air missiles with the integration of indigenous Astra A-A missiles planned in near future.<sup>18</sup> In air-to-the-ground mode, it has test fired a few guided munitions and unguided bombs with work underway to enhance its ground-attack capabilities with the development of a lighter variant of the supersonic cruise missile BrahMos NG.<sup>19</sup> Moreover, some media reports indicate that there are plans to integrate the American JDAM, French Hammer and ASRAAM A-A missiles with LCA Tejas.<sup>20</sup>

On the other hand, most of the JF-17 weapons are of Chinese origin, with few Pakistan-origin smart munitions. The FA-50 too uses American-origin weapons and a few indigenously developed South Korean weapons. Thus, the Tejas is the only aircraft in this category which has a larger spread of weapons package on offer as compared to the JF-17 and FA-50.

**Future Upgrades and Customisation.** One of the most important factors which could tip the scales in any comparison of the three fighter aircraft in Tejas's favour is the fact that the aircraft is

completely indigenously designed, developed, and manufactured by the Indian developers except for the technical consultations that happened with global vendors during the initial phase of its development. On the contrary, the JF-17 is designed and developed by China and manufactured by Pakistan based on technology transferred by China.<sup>21</sup> Similarly, the South Korean FA-50 is a collaborative development by American aircraft manufacturer Lockheed Martin and South Korean aircraft manufacturer Korean Aerospace Industries (KAI).<sup>22</sup> This is important because it limits South Korea's and Pakistan's right to customise and adapt the aircraft as per the buyer's requirements. Presently, almost 50 per cent of components of the LCA are indigenous and, it will reach 60 per cent in the coming years.<sup>23</sup> This translates into greater reliability of spares to buyers, compared with competitors. Secondly, the LCA is going to be technically far superior to other competitors. As its Mark 1A variant is going to be use Active Electronically Scanned Array (AESA) radar, Electronic Warfare Suite (EW), Beyond Visual Range (BVR) A-A missiles, targeting pod, and A-A refuelling capability for longer endurance (BVR, targeting pod, and A-A refuelling capabilities are available in Mark-1 also). Further, the LCA is fully made of composite material which makes its airframe lighter and more durable.

### **LCA Tejas's Achilles Heel**

**Jet Engine.** It is, however, interesting to note that none of the light combat aircrafts being compared have indigenously designed or manufactured jet engines. The LCA Tejas and FA-50 both use American General Electric's 404 engine whereas the JF-17 uses the Russia Klimov RD-93 engine.

In the case of aerospace sector, jet engines form the core of the platform, and, therefore without achieving self-sufficiency in jet engine technology, the industry can't achieve its full potential. Presently, only a handful of countries in the world have complete self-sufficiency in designing, developing, and manufacturing state-of-the-art jet engines. These are mainly the US, Britain, France, Russia, and China. The Chinese are the latest entrant into this elite group with development of their indigenous WS-10 jet engine although it is not yet matured as compared to its global counterparts.<sup>24</sup> These countries not only cater for their domestic demands for civil and military purposes but also export to the

international market to meet both civil and military requirement. Due to its technical complexity, the development of a jet engine is not just capital intensive but is also a time-consuming and technologically challenging process.

The development of India's indigenous jet engine began in 1982 with DRDO's laboratory, Gas Turbine Research Establishment (GTRE) working on developing the GTX 37(1) jet engine. In 1986, the GTRE's 80 KN Kaveri engine programme was integrated with the LCA programme. The programme received government's approval in 1989, with a target of December 1996. Given the difficult nature of the project, the GTRE was not able to meet the deadlines, resulting in extensions in 2000, 2004 and 2009. To avoid further delays, the Kaveri programme was decoupled from the LCA programme and the American GE 404 IN20 engine was chosen.<sup>25</sup> This engine has been used by the ADA during the flight-test phase of the LCA Tejas. So far, 123 LCAs have been ordered by the IAF which will be powered by the GE 404 IN20 engine. In future, the Mark 2 version of the LCA will be powered by a more powerful 98 KN thrust GE 414 engine.<sup>26</sup>

Continued reliance on foreign suppliers for jet engines will stymie the growth of India's aerospace industry and hamper the chances of LCA Tejas emerging as a good alternative to existing light-category fighter aircrafts in the international arms market. The reliance on foreign suppliers will influence the decision on countries we can export Tejas to and drive up the cost of the aircraft as the engine accounts for about one-third of the cost of the platform. Therefore, India must galvanise its efforts to develop an indigenous jet engine to make its defence aerospace industry cost-effective and autonomous for defence exports.

### **Conclusion**

The Indian LCA Tejas, South Korean T-50 and Chinese JF-17 are the three major platforms vying to grab the Malaysian light combat aircraft deal to supply 18 aircraft to the Malaysian Air Force under the 'Capability 55 Plan'.<sup>27</sup> Apart from Malaysia, there are other potential buyers as well among developing countries in Latin America, Africa, and East Asia.<sup>28</sup> Thus, the Tejas has the potential to be a big success in India's push to emerge as a major defence and arms exporter. In addition to adding to India's military-diplomatic clout across the world, successful exports of the Tejas LCA will be

useful in partially recovering the R&D costs and ploughing back the proceeds into future upgrades of the aircraft. The exports of LCA will underpin the credibility of India's indigenously developed defence technologies. Apart from strategic and technological advantages, the defence exports will make the Indian defence industry a major contributor to national Gross Domestic Product (GDP) by generating jobs, revenue, and an industrial supply chain. Therefore, in the case of defence exports, the LCA Tejas could be India's trump card in New Delhi's push for being Atmanirbhar in defence manufacturing and emerging as a key defence supplier in the international defence market in the years to come.

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# Sino-Russian Relations amidst the Ukraine War

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## Abstract

*China and Russia share a unique relationship. There have been many turning points in Sino-Russian relations. Once the flag bearers of communism, their relationship soured in the 1960s, resulting in a Sino-soviet split. After the break of the Soviet Union in 1991, China and Russia have now collaborated against the United States. From forming multilateral organisations with developing countries such as BRICS (Brazil, Russia, India, China, and South Africa) to witnessing the 2008 Global Financial Crisis and a subsequent decline in US power, they have been each other's support. A new leaf in Sino-Russian relations was turned when Russia occupied Crimea in 2014. The most recent landmark event that has decided the Sino-Russian equation is the ongoing Russian invasion of Ukraine. China has provided economic and diplomatic support since the beginning of the conflict. However, China's diplomatic support to Russia has dampened. This article will look at China's reaction to the conflict; an increase in trade and whether China's changing stance is its confused policy or a show of pragmatism.*

## Introduction

The relations between Russia and China have seen several ups and downs throughout history. Both come from massive empires, once being great power rivals. There have been periods of harmony and conflict, now marked by the highest form of friendship. Western experts are digging into the bottom of their relationship, where they refer to each other as 'strategic partners'.

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Russia and China have been united in their fight against the US. Both Xi and Putin see US assistance for democracies in their neighbourhood and elsewhere as US imposition. The leaders also view groupings like the North Atlantic Treaty Organisation (NATO), Quadrilateral Security Dialogue (QUAD) and the AUKUS as a threat to their regimes. Both are permanent United Nations Security Council members and do not oppose each other in international organisations.

The Ukraine War has turned a new chapter in Sino-Russian relations, a watershed moment for the two. When Russia annexed Crimea in 2014, Russia was in a similar situation as it is today. Western countries had sanctioned Russia heavily, while Russia welcomed Chinese investments. Russian gas exporter Gazprom signed a \$400 billion deal with China, and the two countries agreed to work on linking the Eurasian Economic Union (EEU) and the Belt and Road Initiative (BRI). Bilateral trade between the countries reached an unprecedented high of \$147 billion last year.<sup>1</sup> With the onset of the Ukraine war on 24 February, China has shown similar behaviour. Both countries have economic relations which are better than ever. Diplomatically, China has not overtly supported Russia's invasion but has argued about Russia's security interests. We will explore in the following sections the Chinese initial stance on the war and its increase in trade with Russia.

### **China's initial response to the Conflict**

In a meeting on 04 February 2022, when Russian President Vladimir Putin visited China for the Winter Olympics in Beijing, both countries came out with a joint statement<sup>2</sup> which criticised the policies of the Western bloc but did not make any mention of the then-impending Ukraine War. However, this meeting was unique because a new term was coined to define the relationship between the two countries. The "No Limits" partnership is the highest form of camaraderie that Russia and China have seen. It was affirmed by both sides that there was a "strong mutual support for the protection of core interests". Russia's invasion of Ukraine began on 24 February, just after the Beijing Winter Olympics concluded. Although many Western experts speculated, it is unlikely that the two countries were in cahoots regarding the invasion as both countries give a lot of importance to sovereignty and strategic significance.

The two countries have always seen eye to eye on each other's sovereignty. For example, Russia has never made official comments about China's involvement in the South China Sea or Taiwan. Neither has China forced Russia to support China in these matters. Similarly, China had not questioned Russia's involvement in Kazakhstan in January 2022 when the Russia-led Collective Security Treaty Organisation (CSTO) sent a peacekeeping force to the Central Asian nation to quell people's protests or the Russian invasion of Ukraine.

Russia and China's interests match to an extent in certain areas. Russia was a huge export market for the Central Asian Republics and a destination for migrant labour. However, with the Ukraine conflict, the Republics are trying to reduce their dependency on Russia. China is becoming a leading player in Central Asia. Central Asia has welcomed China's involvement in the area as it needs China's monetary support for its development and appreciates China's non-interference in its local matters. Russia has not opposed or interfered in China's increasing regional influence to create any kind of conflict between China and Russia.

Ukraine is not under the ambit of China's interests. When the conflict broke out, China did not condemn the war. Chinese ministers had a lot to say in support of Russia. On 7 March, Chinese Foreign Minister Wang Yi called Russia China's 'most important strategic partner'.<sup>3</sup> Chinese Vice Foreign Minister Le Yucheng, in a meeting with Russian ambassador Andrey Denisov, called on to 'strengthen strategic cooperation' with Russia.<sup>4</sup> China has criticised Western sanctions and affirmed the same in international organisations like the United Nations General Assembly. China has abstained from voting against Russia on at least two occasions in the United Nations Security Council (UNSC). One occasion was in February when the war had just taken flight. Russia vetoed the draft resolution telling Moscow to withdraw its troops with a ratio of 11:1.<sup>5</sup> On 30 November, China again abstained to vote against Russia's annexation in the UNSC. Even in the Chinese media, pro-Russian content was broadcasted, and anti-Russian and pro-Western content was censored, possibly to steer public opinion of the war.

On 15 June 2022, Xi celebrated his 69th birthday by calling Putin, reassuring him that China-Russia bilateral relations

'maintained a sound development momentum in the face of global turbulence and transformations'.<sup>7</sup> He reiterated the cooperation between the two countries was practical, adding that Russia supported the Chinese-led Global Security Initiative and did not interfere in internal matters, such as Xinjiang, Hong Kong and Taiwan. Pledging its immense support for Russia time-to-time, China called for a peaceful resolution of the conflict in the meeting. We will look at the increase in trade trends between China and Russia in the next section.

### **An increase in Trade**

Economic trade has soared between China and Russia since the Ukraine War began. Amidst sanctions, Russia needs new markets. China, with a much bigger economy, needs cheap products. In August 2022, China exported \$8 billion and imported \$11.2 billion from Russia. China's exports climbed by \$600M (8.11%) from \$7.4B to \$8B between August 2021 and August 2022, while its imports rose by \$4.17B (59.3%) from \$7.04B to \$11.2B.<sup>8</sup> Russia mainly exported raw materials and energy products to China, such as precious metal ore, platinum, iron, crude petroleum, coal, petroleum gas, sawn wood, and refined copper.<sup>9</sup> China exported finished goods such as telephones, computers, construction vehicles, fur skin apparel, cars, and plastic products.<sup>10</sup>

China has been importing oil supplies at discounted prices from Russia since the war began. As a result of its invasion of Ukraine, Russia lost governments and private businesses as clients for its Ural crude oil, which caused its price to drop. This year, Russia supplanted its position as China's top oil supplier, taking over from Saudi Arabia. 8.342 million tonnes of Russian oil were imported by China in August. This comprised shipments by sea from Russia's ports in Europe and the Far East and supplies pumped through the East Siberia Pacific Ocean pipeline.<sup>11</sup> However, oil imports from Saudi Arabia are returning to China. Last month, imports from Saudi Arabia increased to 8.475 million tonnes.<sup>12</sup>

Similarly, Russia exported record amounts of petroleum and natural gas to China. From roughly 900,000 tonnes in the same month last year and 1.9 million tonnes in August, the amount of coking coal imported from Russia increased to 2.5 million tonnes in September of this year.<sup>13</sup> Despite a 12 per cent fall in China's

overall LNG purchases, liquefied natural gas (LNG) sales increased by a third to 819,000 tonnes from a year earlier.<sup>14</sup> According to Alexey Miller, president of Gazprom, the company has been boosting its gas exports to China through the Power of Siberia gas pipeline, increasing volume by 60 per cent in the first eight months of 2022.<sup>15</sup> In the seven months since the start of the war in Ukraine, energy exports to China have reached a total value of over \$51 billion. China spent \$30 billion on Russian energy in the same in 2021.<sup>16</sup>

After the war began, Russia was hit with unprecedented sanctions by the West, including Russia's biggest banks, Sberbank and VTB, being cut off from the SWIFT system, a worldwide messaging system which connects financial bodies and ensures a smooth transaction of payments. Direct access to the US dollar for Russia was also suspended. The Russian financial system was affected majorly. The Russian currency was worth about 76 cents to the dollar before the start of the war. However, on 2 March, the ruble touched a record low of 110 to the dollar in Moscow.<sup>17</sup>

As reported by Kommersant, the Russian daily trade volume increased to 4.5 trillion rubles in July. Most of this trade was made in Yuan, with its share being 20 per cent.<sup>18</sup> The US dollar and the Euro have rapidly declined in Russia. Yuan and other national currencies are replacing dollars in overseas commerce and settlements. The Bank of Russia and commercial banks are also undertaking a de-dollarisation strategy. Moreover, Chinese enterprises are taking the place of Western enterprises in Russia. There has been a hike in the number of Chinese smartphones in the country. Two-thirds of all new smartphone sales in Russia between April and June were that of Chinese devices.<sup>19</sup> As brands such as Apple and Samsung stopped their sales, Chinese smartphones have gained popularity in the country. Russian electronics company M Video Eldorado said that the overall market share of Chinese smartphone brands in Russia was constantly rising, from 50 per cent in the first quarter to 60 per cent in April to more than 70 per cent in June.<sup>20</sup> There was also a significant increase in the sale of Chinese-made cars in the Russian market. In a report by the Russian agency Autostat, the sale of Chinese automobiles was 9.5 per cent from January through March. It grew to 24.3 per cent in July. The figure was almost 26 per cent

in August.<sup>21</sup> Only domestic brands have a more significant market share in the automobile market, whereas Korean, Japanese, American and European brands have taken a backseat.

### **A Confused Chinese Policy or a Show of Pragmatism?**

The Ukraine Conflict has put China in a tricky situation. When the conflict began, China neither supported nor condemned Russia's invasion. It blamed the West for starting the war and was against sanctions. However, if China had openly opposed the attack, its relations with Russia would have been compromised but not necessarily improved with the West. The Chinese public and those in the international system would have seen Chinese foreign policy as shaky if China had gone against Russia after the 4th February meeting between Xi and Putin.

China and Russia might be partners but of different stature. Russian dependency on the Chinese has only grown since the conflict began. Russia has become increasingly isolated and condemned by the Western media. However, it has a pillar of support in the name of China. China has been an economic lifeline for Russia after Russian banks were removed from the SWIFT system. Russia's exports to China have surged at discounted prices, which include oil and other natural resources. Meanwhile, China's renminbi has become more robust, and Russian markets are flooded with Chinese smartphones and cars. China's influence has tremendously increased in the Russian economy, but China has softened its diplomatic stance in support of Russia.

Many Western media have maintained that China initially supported Russia's invasion. However, the Chinese stance has softened over time. In an interview in March, the Chinese ambassador to the US, Qin Gang, said that the 'limit' to Russia-China relations was the UN Charter.<sup>22</sup> Chinese giant Sinopec also halted projects in Russia as a caution to the sanctions regime. In June, China's Deputy Foreign Minister Le Yucheng was removed due to his faux pas in calculating Russia's invasion of Ukraine. It was highly suspected that Le was removed because of his misjudgement in keeping the Russia-China relations getting stronger. Chinese senior officials have not used the term 'no limits' since the war began. When Xi called Putin on his birthday, Xi called for all parties to "push for a proper settlement of the Ukraine crisis in a responsible manner".<sup>23</sup> In the first in-person meeting

since the Covid-19 pandemic began, both presidents met at the Shanghai Cooperation Organisation (SCO) summit in Uzbekistan. China reiterated its support for Russia but said it had 'questions and concerns' about the Ukraine issue.<sup>24</sup> China has also been highly against using nuclear weapons. China issued an official statement after German Chancellor Olaf Scholz visited China, condemning the use of nuclear weapons, and saying that nuclear wars must not be fought.<sup>25</sup>

### **Conclusion**

China and the whole world did not estimate that the war would go on till now, almost completing nine months. Over the course of the conflict, China has been pragmatic, adopting a *realpolitik* stance in the conflict. Although Sino-Russian relations are lopsided, China has found a major partner in the form of Russia. The way forward can be characterised by China's growing economic influence in Russia and its surrounding region. However, since China does not want to break off relations with the US or the west completely, the Chinese diplomatic response to war has indeed been subdued. Whereas western media might be turning a blind eye to it, there is a gradual change in China's behaviour. China has calculated its move and is trying to stand by its policies accommodating both the west and Russia.

China has also learnt a few lessons from the war. China has emphasised more than ever its domestic capabilities, working towards strengthening its military, economic and technological prowess. Russia's invasion of Ukraine has also drawn comparisons to China's equation with Taiwan. China is constantly provoked by the US on the Taiwan issue, the most recent event being the visit of US Speaker Nancy Pelosi. However, China understands the repercussions of invading Taiwan. In a world where the west is increasingly dependent on China, it would be difficult to inflict pain upon China. Similarly, China is not all-powerful and depends on western technology and Taiwan's semiconductor industry. It is unlikely that China would voluntarily give that up in the current situation and engage in a war.

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# Indian Civilisation from the Perspective of Oswald Spengler

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## Abstract

*On 20 October 2022, the author gave a talk at Blankenheim, German Eiffel, during the Spengler Conference 2022, on 'Relevance of Moral Philosophy of Oswald Spengler to Indian Civilisation and His Remembrance in the Indian Academic Landscape'. This article, based on the above talk, is an outcome of the research carried out by the author into the writings of the famous German historian Oswald Spengler and covers the essence of his thoughts on world history, major civilisations, and his prophecies. The article gives an insight in to his outlook on many aspects of Indian civilisation, including the imperial nature of few Indian dynasties, Buddhism, and Indian philosophy. Various works of Spengler and his historical concepts and prophecies are also be discussed here. An endeavour has been made to present the history of the Indian civilisation, from the perspective of Oswald Spengler, to help the Indian strategic and academic community to have a better understanding of their civilisation.*

## Introduction

In recent times, the existing historiography concerning Indian history is under scrutiny and there is much emphasis on re-writing the Indian history from new perspectives or using fresh sources. As such, looking at Indian history with plural perspectives around the world, rather than from a single narrow viewpoint, will facilitate the Indian strategic community to imbibe a holistic understanding of our past. There exists a popular perception in India that the westerners have largely considered the Indian

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civilisation as some what inferior when compared to their own civilisation.

Contrary to this popular perception, the strengths of the Indian civilisation and the wisdom of ancient Indians, were acknowledged a century ago by none other than the renowned German historian and philosopher, Oswald Spengler (29 May 1880- 08 May 1936). Spengler is known for his book '*Der Untergang des Abendlandes*' originally published in German (subsequently translated in English as 'The Decline of the West'), in which he has highlighted the uniqueness and spiritual nature of the Indian culture, along with the detailed study of seven other cultures, i.e., Egyptian, Chinese, Classical Antiquity, Mexican, Babylonian, Islamic and Western (Faustian).

### **Spengler: An unorthodox Historian and Philosopher**

Eighty-six years after his death, Oswald Spengler remains one of the most controversial yet, a fascinating historian and philosopher of twentieth century. He stands out as a brilliant historian who challenged the traditional idea of endless linear progress of civilisations, and propounded that civilisations follow a cyclic pattern.<sup>1</sup> Spengler advocated, with a kind of fatalism,<sup>2</sup> that every civilisation, just like an organism, goes through phases of youth, maturity, and eventual decline.<sup>3</sup> As per him, the period of about 900 years of dominance of the west was over and its decline commenced sometime in 1800.<sup>4</sup> He further substantiated his argument about the end of civilisation by stating that Patliputra, the capital city of many empires in the ancient India as also the largest city in the world during the Mauryan Empire, was found abandoned amidst a vast mass of empty houses as seen by Hsuan Tsang in the year 635 AD. Spengler further added that every civilisation, confined in a given geographical area exists like a closed system free from interference from external factors. His cyclic theory as well as the comment about the decline of the western civilisation invoked strong criticism from many historians and academicians.<sup>5</sup>

Spengler was inspired by the writings of the German philosopher, Friedrich Nietzsche (1844-1900) and the latter's views on European thought. Spengler's ideas were also greatly influenced by Johann Wolfgang Goethe and had much similarity with those of the Greek philosopher, Plato.<sup>6</sup> He commenced work on 'The Decline

of the West' in 1911 and the first volume of the book was published in 1918. The book, which proclaimed that the first World War was a predestined event as part of the larger world-historical rhythm and manifestation of the historical phase of the preceding centuries, provided much-needed philosophical succour to the German public and academic community who were still smarting under the humiliating defeat at the hands of Allied Forces.<sup>7</sup> The book was a resounding success and was read widely within and outside Germany.<sup>8</sup> It was soon translated into many other languages. His second book 'Prussianism and Socialism' was published in 1919. This is another thought-provoking book which gives out a comparative analysis of the political ideologies of Britain and Germany.

The third book by Spengler, 'Man and Technics' published in 1931, highlighted the pitfalls of technology and industrialisation. The book mentioned the likelihood of the proliferation of the western technology to other regions of the world. The fourth and the last book by Spengler 'The Hour of Decision' was published in 1934. The book, critical of the racial theories propagated by the Nazis, also became immensely popular, however, it was banned subsequently by the Nazi regime. As Spengler found the approach of the Nazis towards Jews, as also their biological ideology, unacceptable, he fell out with Hitler sometime in 1934, a year after the latter assumed the Chancellorship of Germany.

Spengler's views on world history were criticised by some of his contemporaries. However, his writings inspired millions of people and also influenced many leading personalities. Henry Kissinger, the former Secretary of State of USA, discussed in great detail about Spengler's ideas in his thesis 'The Meaning of History: Reflections on Spengler, Toynbee and Kant', submitted to Harvard University in 1950. Ludwig Wittgenstein, the famous Austrian philosopher, had stated that Spengler was one of his main inspirations. Spengler's thoughts also influenced the writings of Joseph Campbell, Martin Heidegger, and many other philosophers.

### **Spengler's views on concept of History Writing**

Spengler, in 'The Decline of the West' dismissed the traditional way of looking at the world history on the ground that it is too narrow and flawed. He added that there is a need to view world history from new perspectives. He also remarked that the world

history cannot be holistically comprehended by the existing periodisation of history in terms of ancient, medieval, and modern. Spengler remarked that the notion held by most western writers that world history should be focused around west; the highest civilisation, similar to the Ptolemaic theory, is faulty. He also observed that as per the perception of the West, the history of the cities such as Athens, Florence, and Paris are accorded greater relevance than Loyang or Patliputra. Spengler enunciated his own Copernican model by which history should not be the life story of only one civilisation, but that of many civilisations.

Spengler writes that cities are the essence of a civilisation, which facilitate the understanding of the political and economic history of that civilisation. In addition to the mention of the other world-cities such as Paris, Rome, Thebes, and Baghdad, Spengler has highlighted that the large cities of Ujjain, Kanauj and Patliputra were equally evolved and known even in China and Java.<sup>9</sup>

### **Major Predictions made by Spengler**

In addition to his brilliant book, 'The Decline of the West', Spengler is admired for his various prophecies some of which eventually came true. In 1936, months before he died, he wrote in a letter to his friend, Hans Frank, that the 'thousand-year Reich' of Hitler would not last beyond 1946. At that time, no one believed him as the Nazis seemed all powerful then. He was much condemned for saying so and faded into oblivion thereafter. However, when in 1945 his statement was proven right, his writings were re-discovered in a big way.

In 1933, Spengler foretold that just like the Hague Conference of 1907 paved the way for the First World War, similarly the Washington Naval Treaty of 1921 will also result in another World War. These predictions came true. In his 'Man and Technics', he correctly predicted, in 1931 that in the future the labour force of Europe would be replaced with the labour force from third world countries.

Spengler also stated that after 2000 AD, cities will grow to mega-cities of 10-20 million inhabitants that will be spread over huge areas and will surpass the biggest cities existing in his era. This prediction can be validated by the fact that as per UN 2018 population estimate, 33 cities around the world have a population

of more than 10 million people. Lastly, Spengler in 1917 had also predicted the collapse of communism in the erstwhile USSR, a prophecy that came true in 1990.

### **Spengler's views on Indian Civilisation**

Spengler has written about multiple aspects of Indian history in 'The Decline of the West'. He writes that as per his analysis, the culture of India including the cultures of Babylon, China, Egypt, the Arabs, and Mexico are as significant as the western cultures and, in fact, over shadowed the latter in terms of spirituality. He further adds that unlike the western civilisation, which possesses high level of historical sense, the Indian mind was spiritually inclined, and inwardly focused, and, therefore, did not concern much about recording the physical world<sup>10</sup> around it. As a result, the chronological recording of various historical events is inadequate and less accurate.<sup>11</sup>

Spengler laid lot of emphasis on Buddhism and stated that 'Buddhism is not a religion at all in the sense of Vedas'. This is because, as per him, Buddhism did not impose any restrictions or code of conduct on its followers. He further added that the Indian philosophical thought of soul attaining its ultimate aim and release from the cycle of life was also influenced by Buddhism towards new thoughts.<sup>12</sup>

Spengler also brought out the imperialistic nature of Mauryan and Sunga dynasties in India during the period 321 BC to 185 BC, during which the Mauryan Empire had expanded its reach to the whole of northwestern empire. He adds that during that era came a rare occasion in history when the Indian Buddhist culture could have come in contact with the Chinese Confucian and the classical Stoic cultures. However, Spengler also qualifies further by stating that owing to the Indian nature, these endeavours did not succeed beyond a point.<sup>13</sup>

Apart from the ancient Indian imperialist efforts, Spengler also talks about the French imperialistic efforts and explains how providence prevented Napoleon from establishing a French colonial empire in India in the early nineteenth century. He refers to the incident of 14 February 1804, when the fleet led by Charles-Alexandre-Leon Durand Linois was defeated by the naval force of British East India Company in the Indian Ocean. Spengler opines

that this small naval action led to a rethink of strategy and the French Government cancelled their plans to invest more forces against the British in India. Spengler states further that Tsar Alexander's denial of support to Napoleon was another reason for this decision. Incidentally, similar opportunity came to France in 1754, when efforts by Dupleix, the then Governor of Pondicherry made significant progress in colonising India. However, these efforts were disregarded and Dupleix was recalled to France by the Versailles Court under Louis XV.

### **Spengler as viewed by Indian Philosophers**

Many Indian philosophers and historians have commented upon the works of Spengler. PC Chatterji has referred to Spengler while writing about the birth and death of civilisations, as explained by the Irish poet, William Butler Yeats. Yashdev Shalya, on the other hand, has classified Spengler, along with Hegel, Marx, Puranas, and the Christian philosophy as historicists those who view history as a goal-oriented process.<sup>14</sup>

Interestingly, Devadoss has done a comparative analysis between the ideologies of Schopenhauer, Mahatma Gandhi and Oswald Spengler.<sup>15</sup> Schopenhauer regarded Buddha and Christ as ideal personalities for their self-sacrifice and renunciation of the world whereas, Spengler viewed fact and power as more important. However, Gandhi's ideology combined both the facets: moral idealism and political success.

Another Indian philosopher, Raghuramaraju has highlighted that many Indian philosophers have not correctly understood the Western philosophy, referring to the 'Decline of the West'. MN Roy has drawn a comparison of the cyclic theory of civilisations by Spengler to a similar theory conceived by the Italian philosopher, Giambattista Vico in the eighteenth century.<sup>16</sup> BK Jha speaks of Spengler's thoughts while describing the concept of trans-humanism. He refers to the Spengler's dream of the formation of a world community as the final stage of evolution of major civilisations of the world.<sup>17</sup> Oroon Kumar Ghosh was also influenced by Spengler's writings as is evident from 'Convergence of Civilisation', written by the former. Lastly, the famous Indian philosopher, Sarvepalli Radhakrishnan, while talking about the history of mankind and cosmos, refers to the cyclic theory of Spengler to fully explain the historical concept.<sup>18</sup>

### **Relevance of Moral Philosophy of Spengler to the Indian Civilisation**

India has recently completed the seventy-fifth year of its independence. As a nation known for its spirituality and ancient wisdom, and striving for overall growth, what can we learn from Spengler's historical concepts? Should we, like some other civilisations in the past, fall in the trap of adopting the Ptolemaic model and describe own culture as the centre of gravity and the most dynamic in the hierarchy of civilisations? Such a standpoint has often led nations to a destruction path. Or should we follow the Copernican model as advocated by Spengler and take a rational view of other civilisations based on factual position and critical analysis, with the aim to imbibe their strengths and shun their weaknesses for refinement of our civilisation? Does the greatness of our nation not consist in working towards the goal of '*Vasudhaiva Kutumbakam*', as enunciated in Maha Upanishad, and contribute towards overcoming the larger goal of numerous challenges that the world community faces today?

The study of 'The Decline of the West' clearly reveals that the Greek, Roman, and Egyptian civilisations had an advanced system of recording history. The Egyptians preserved their history through stone memorials and hieroglyphic script, which can be read today, even after a passage of 4000 years. However, the ancient India apparently did not give requisite focus towards this aspect, as stated by many historians. As such, a significant period of Indian ancient history has not been recorded at all. Moreover, a large part of Indian history is reconstruction of events by western writers/academicians from various texts and monuments or travel accounts by foreigners. This aspect of incorporating a well-structured system of history writing needs to be imbibed by Indian culture.

### **Conclusion**

The article has made an attempt to provide a glimpse in to the works of Oswald Spengler, a controversial yet revered German historian. Spengler has given an in-depth analysis about various aspects of the eight major civilisations of the world, including the Indian civilisation, whose uniqueness and strengths have been brought out in a manner very few western historians have done so far. Spengler's writings and his great insight into world history has much relevance to the Indian academicians even after passage

of a century. An endeavour has also been made to bring out the relevance of Spengler's thoughts to India; in its current journey towards growth and accomplishment of the goal of '*Vasudhaiva Kutumbakam*'.

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# Reforms in the Grievance Redress System

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## Abstract

*The members of the armed forces have been bestowed with the right to make complaints seeking the redress of their grievances. The provisions for the redress of grievance are contained in the three Services Acts and procedures have been elaborated in the Regulations. However, the regulations provide different procedures for the processing of grievance petitions, damaging the effectiveness of a statutory right. In reality, the grievance redressal system has various shortcomings, leading to the increase in the number of petitions filed in the Armed Forces Tribunal and the higher courts. There is need to replace the existing grievance redressal system with an effective, transparent, and non-vindictive mechanism which is a sine qua non of an efficient military organisation.*

## Introduction

In India, the fundamental rights of armed forces personnel are restricted by Article 33, to ensure proper discharge of duty and the maintenance of discipline. The armed forces personnel are debarred from becoming members of trade unions or associations, attending political meetings, and communicating with the press. While curtailing some of their civil liberties, the State has given armed forces personnel the right to make complaints in order to seek the redress of their grievances. The right of members of the armed forces to complain and request redress of grievances against actions of their superiors is contained in the three Services Acts: sections 26 and 27 of the Army Act (1950) and the Air Force Act

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(1950); and section 23 of the Navy Act (1957). This statutory right is not a component of 'welfare'.

### **Procedure for Redress of Grievances**

The procedure for the submission and processing of grievances in the three Services is contained in the Regulations of the respective Service.<sup>1</sup> The Army and the Air Force Acts provide that any person who deems himself wronged by any superior officer may complain to the Commanding Officer (CO) for the redress of his grievance. When the officer against whom the complaint is to be made happens to be the one to whom the complaint should be preferred, the aggrieved person may complain to the officer who is next in superiority to the officer concerned. The right to complain can be exercised only once. However, a second complaint can be allowed if fresh facts and circumstances emerge necessitating reconsideration of the case. The complainant must establish that he has been denied or deprived of something to which he has a military right.<sup>2</sup> The Navy Act states that if an officer or sailor thinks that he suffered any personal oppression, injustice, or other ill-treatment at the hands of any superior officer, he may make a complaint. Redressal applications by officers are to be addressed to the Central Government and by the personnel below officer rank (PBORs) to the respective Service Chiefs.

On receipt of a complaint, the CO is to investigate the case and, if possible, redress the grievance. If the CO is not in a position to redress the grievance then the application, along with a report from the CO, is to be forwarded to the next higher formation in the chain of command. The PBOR's statutory right is exhausted after his application has been considered and a decision has been taken by the Service Chief. The Central Government is empowered to revise the decision of the Chief, but a PBOR has no statutory right to petition the government for such a revision. While relief to the petitioner may be given by the lower authority, the final rejection of the application can only be at the level of the respective Service Chief. In case of the officers, the decision of the Central Government is final.

### **Time-frame for Processing**

The regulations of the three Services state that grievance applications are to be processed expeditiously; however, the time-

frame for processing is different in the case of each service. In case of the army, when the complaint does not contain any accusation requiring investigation, it must reach the Army Headquarters within 135 days. If the complainant has made an accusation requiring investigation, the complaint should reach the headquarters within 180 to 195 days. The regulations for the air force provide that complaints should reach the Chief of the Air Staff within 45 days of the date of submission and no intermediate authority should hold up the complaint for more than 10 days. In the event of a delay, a report explaining the reasons to delay is required to be made to the next higher authority. In the navy, the complainant can appeal directly to the next superior authority if he does not receive the final reply within a period of six months from the date of submission of his complaint.

### **The Problem**

**Inordinate Delays.** Time-frame for processing of a grievance petition is different in the case of each service. For instance, in the case of the army, when the complaint does not contain any accusation requiring investigation, it is required to reach the Army Headquarters within 135 days. If the complainant has made an accusation requiring investigation, the complaint should reach the headquarters within 180 to 195 days. Moreover, the regulations do not provide any time-frame for the Army Headquarters or the Central Government to give its final decision in the matter. Undue delays in the processing and disposal of complaints, which is often justified under the pretext that the military chain of command is engaged in making investigations, is another source of problem. There have been cases where the final decision on grievances relating to promotions has been delayed until the complainant has retired. In today's era of email, fax and cell phones, the fact that a complainant has to wait for nearly 8-10 months (in some cases even more) to get his grievance redressed is not only distressing but also worrisome. The delay in the finalisation of a complaint often frustrates the complainant, leading to dissatisfaction and demoralisation.

**Faulty Processing.** The processing of a grievance petition is faulty. The officials, who may be the root cause of the grievance, process the complaint. During the processing of a complaint, the complainant is not informed about the comments of the section

commander and intermediate authorities on his grievance application. In the case of *Union of India v. Maj Gen Arun Roye* (2008), the Calcutta High Court opined, “[...]non-furnishing of comments of the intermediate authorities to the complainant who lodged the statutory complaint is tantamount to violation of the principles of natural justice. This is because the comments that are furnished by the intermediate authorities to the Central Government are essential to the complainant, so as to enable that person to know what has been commented against him/her by the said military authority while forwarding the complaint to the Government”.

**Decision is not ‘Reasoned’.** The decision on an application is not required to be a ‘reasoned’ order and it could be conveyed in a brief sentence, such as, “Your application has been rejected by the competent authority as being devoid of merit”. Stereotype rejection orders reinforce the doubt that complaints are treated arbitrarily and against the principles of natural justice. On a number of occasions, the Supreme Court has unequivocally endorsed and underlined the requirement of giving reasons in support of an order. The failure to give reasons amounts to denial of justice. The rejection of a grievance, in the absence of any reasoning, indicates either that the authority did not listen or that it took an arbitrary decision. Reasons substitute subjectivity with objectivity. The reason given for a judgement plays a significant role in demonstrating that the person concerned has actually been heard.<sup>3</sup>

**Coercive Provisions.** In the army, if a complainant has made an accusation in the grievance petition, he/she is required to render a certificate, “I undertake that any false statement or false accusation made by me in this complaint will render me liable for disciplinary action”. In cases of the use of abusive language, misbehaviour and sexual harassment, which may take place in private, it may not be possible for a victim to support his/her accusation with any documentary proof or witness. Then the victim would be liable to disciplinary action under the Army Act based on the certificate rendered with petition.<sup>4</sup> This often deters the victim from seeking redress and makes the statutory right meaningless.

**Legal Help and Harassment.** All levels of the Service hierarchy are entitled to seek legal advice on a complaint. However, the aggrieved person is not provided any legal help for preferring his

complaint. If the grievance is against the higher authorities, the affected individual or his family may also face social seclusion and harassment. There have been allegations that those lodging complaints against their superiors have been transferred to far-flung places, causing harassment to them and their family members.

**Increasing number of Court Cases.** There has been an unusual increase in the filing of cases in the Armed Forces Tribunal and courts by the men in uniform. There are nearly 19,000 petitions pending in the Armed Forces Tribunal which demonstrates a gradual erosion of faith in the system of redress of grievance in the armed forces.<sup>5</sup> Frustration and harassment may also push personnel to alcohol dependence and cause stress-related mental disorders.

### **Grievance Redress in other Democracies**

In the United States, military persons have the right to complain and request redress of grievances against (i) mistreatment by a superior; (ii) failure to act on a request (such as a request for medical attention or a request for hardship discharge); (iii) unlawfully restricting a military person's rights; (iv) justice rights; (v) unlawful discrimination or sexual harassment; (vi) damage to, or improper seizure of, personal property.

There are several formal methods for requesting redress of grievances, including (i) complaints through the chain of command; (ii) correspondence with a Member of Congress; (iii) an Inspector General (IG) complaint for instances of fraud, waste, and abuse; (iv) an Equal Opportunity complaint for instances of discrimination or sexual harassment, (v) Article 138 Uniform Code of Military Justice (UCMJ) complaint, for instances of specific abuse, discriminatory practices of a superior officer, or for regulations not being followed by the command; (vi) Article 139, UCMJ complaint, where personal property is taken or destroyed; (vii) petition to the Board for correction of military records to change adverse entries. Complaints made to Members of Congress and the Inspector General, including Equal Opportunity complaints, is 'protected communications' under the Whistle Blower Protection Act. The complainant is protected to some extent from adverse actions deemed to be taken in 'reprisal' for their complaint. A complainant

who desires to submit a grievance may consult a military lawyer for advice and assistance in drafting.

In Canada, which was the first to establish a grievance redress system that includes an external review, separate and independent from the chain of command, the complainant is required to first submit the grievance to the CO. If the complainant is not satisfied, the CO is to forward the grievance to the Grievance Board. The Board is mandated to review all military grievances, and submits its findings and recommendations to the Chief of Defence Staff, and also to the complainant. The Board, which consists of civilians and former military personnel, has quasi-judicial powers and can summon witnesses and compel them to give oral or written evidence. It can hold a public hearing to benefit the participants and serve public interest.

In the UK, a person in Service, or one who has ceased to be subject to Service law, but thinks himself wronged in any matter relating to his service, may make a complaint under Section 334 of the Armed Forces Act 2006. The Armed Forces (Redress of Individual Grievances) Regulations, 2007 provides three modes for redressal: (i) a complaint may be lodged with the service complaint commissioner (civilian); (ii) a grievance application can be forwarded to the CO and; (iii) where a complaint has been considered by a Service Board, an officer has the right that a report on his service complaint be referred to the Sovereign.

### **Need for Reform**

Roskill (1964), in *The Art of Leadership*, has assigned the duties of a commander towards his subordinates.<sup>6</sup> He writes, "It is my belief that the Commanders should encourage their juniors to come to them with their ideas and their problems, and even with their grievances and complaints. If grievances are bottled up, discipline will suffer— probably through irresponsible talk among junior officers already condemned. Merely to be given an opportunity to state a grievance goes a long way towards eliminating it; since no responsible man will nurse a grievance after he has been brought face to face with the cause of it. Nor should the senior officer hesitate to admit error or even to make an apology, if he feels there is justice in a complaint against himself".

The 2nd Administrative Reforms Commission Report (2005) describes nine qualities of good governance. These are participation, rule of law, transparency, consensus orientation, equity, responsiveness, effective and efficient process, accountability and strategic vision of the leaders. Concerned over the increasing number of soldiers posting their complaints on social media, a new grievance redressal mechanism was started in January 2017 wherein soldiers could air their grievances directly to the Chief of the Army Staff through WhatsApp messages. This ad hoc system was conditional as soldiers had to first exhaust existing laid down grievance redress procedure. The armed forces have to revamp their grievance redress process keeping in view the principles of good governance and system of grievance redress followed in the other democracies. The government must ensure that:

- The three Services follow a uniform policy framework and timeframe for the redress of grievances.
- The final order for the redress of grievance petition is a reasoned one and be made within two months of submission of a grievance.
- Coercive provisions from the Regulations are deleted.
- The redress system is made more transparent and the authorities are held accountable for undue delay.

### **Conclusion**

The concept of military personnel having the right to grieve and receive redress is not new. In India, there is need to replace the existing grievance redressal machinery with a vibrant system under which every person can take up his redress for grievance without fear of higher authorities. If the internal grievance redress system of an organisation is effective, most problems can be resolved in-house and would be no need for employees to go to tribunals and courts to seek justice. The armed forces are an integral part of a democratic state and society. The government must understand that respect for the rights of members of the armed forces would be helpful in remedying certain malaises like stress, suicides, fragging, and shortage of personnel, which the armed forces are facing today.<sup>7</sup>

## Endnotes

<sup>1</sup> The Regulations for the Army (1987), para 364; the Regulations for the Air Force (1964), para 621 and 622; and the Regulations for the Navy (1991), Part II, para 238 and 239 prescribe procedure for submission and processing of the redress complaints. Navy's grievance Redress System is further elaborated in Navy Order 24/2007.

<sup>2</sup> For instance, non-acceptance of an officer's request for premature retirement does not constitute a service wrong under the three services Acts.

<sup>3</sup> The requirement of recording reason is one of the principles of natural justice. It is most valuable safeguards against any arbitrary exercise of power by the adjudicatory authority. Law Commission of India in its 14th report recommended that in case of administrative decisions, provision should be made that they should be accompanied by reason. The reason will make it possible to test the validity of these decisions by machinery of appropriate writs.

<sup>4</sup> Section 56(b), the Army Act, 1950. The notes to section 56(b) further states: "It is not necessary that the false statement affecting the character of an officer or other person should be directly related to the subject of the complaint. It is sufficient if the false statement is calculated to create prejudice against the officer etc., with reference to whom the complaint is addressed.

<sup>5</sup> Bhadra Sinha and Amrita N. Dutta, "Armed Forces Tribunal has 19,000 pending cases, but here's why this is least of its problems," *The Print*, March 18, 2021.

<sup>6</sup> Roskill, Capt S.W., *The Art of Leadership*, London: Collins (1964), p. 136.

<sup>7</sup> Over 800 armed forces personnel have committed suicide in the last five years, with maximum suicides reported from Indian Army, the government informed Rajya Sabha in July 2022. A total of 819 armed forces personnel committed suicide in the last 5 years, with the Army reporting a maximum of 642 such cases. Apart from Indian Army, Indian Air Force reported 148 cases of suicide in five years, while Indian Navy reported 29 cases. "Over 800 suicide cases reported in armed forces in last five years: Government," *The Economic Times*, July 19, 2022.

# Do Non-Nuclear Weapon States Carry the Fear of Nuclear Threat?

## An Assessment through the Lens of Ukraine-Russia Conflict

Ms Saanjana Goldsmith<sup>®</sup>

### Abstract

*In January 2022, the 'Nuclear Armageddon Watch' was timed at 100 seconds to midnight, which is highly alarming. The Nuclear Non-Proliferation Treaty (NPT) which entered into force in 1970, created an environment of nuclear checks and balances. Although highly criticised for its biased approach, the NPT is the oldest and the only existing Arms Control Treaty from the Cold War era. However, despite its existence, the stimulating debate between nuclear 'haves' and 'have-nots' has raised multiple concerns of nuclear risks that question the international structure. The recent Ukraine-Russia conflict has stunned the world for multiple reasons. However, the one pertinent concern expressed by the international community is Russia's nuclear threat to Ukraine, which is a Non-Nuclear Weapon State (NNWS).*

*Should the threat be taken seriously? Or is the threat directed towards US and the West via Ukraine? The international community is in splits with the varied perspectives. This article assess the nuclear dimension of the Ukraine-Russia conflict and will discuss the following questions- First, Does NNWS carry the fear of nuclear threat? Secondly, why does Russia's nuclear threat to Ukraine raise questions on the NPT regime? Thirdly, why does*

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*the Cold War rivalry continue to dominate the international structure and, in turn, dictate the security dimensions of the smaller states? The article recommends strengthening the nuclear security regime and the role of the international community in achieving it.*

## **Introduction**

The changing geopolitical dimensions in the contemporary world have spurred a number of debates within the international community. The dynamic nature of international politics should be understood through the history of events, as it provides a base for analysing the contemporary issues. One such issue that grabbed the international attention in the beginning of 2022 was that of Russia invading Ukraine. This immediately sparked a global condemnation of Russia, with US and its allies rekindling NATO and expanding its membership. The Ukraine-Russia conflict has ignited a series of issues that should be addressed, some of which might turn out to be fatal. However, one of the most alarming situations in this conflict was Russian President Vladimir Putin issuing a nuclear threat to Ukraine.

The post Second World War period was primarily dominated with the discussion on nuclear weapons and its preventive measures. Both the US and USSR, were involved in vertical proliferation and by the Détente of 1970's, a number of treaties were signed between both the superpowers. Since its creation, nuclear weapons have been posed with 'security threat perspective'. However, with the disintegration of the USSR and the changing political structure, from bipolar to unipolar and then to multipolar; the existence of nuclear weapons escalated from one phase to the next.

In January 2022, the 'Nuclear Armageddon Watch' was timed at 100 seconds to midnight which is alarming<sup>1</sup>. In the contemporary context, nuclear weapons continue to occupy a dominant role within the security perspective and influence the national security dimensions of the states. The most prominent debate within the nuclear discussion is the debate between 'Nuclear haves' and 'Nuclear have-nots'. The Nuclear Non-Proliferation Treaty of 1968 barred the Non-Nuclear Weapon States (NNWS) from acquiring nuclear weapons and, as such, they continue to face a security

dilemma, especially if they share a close geographical proximity with a nuclear state. This debate has been exemplified in the case of the Ukraine-Russia conflict whereby Russian President Vladimir Putin had employed nuclear rhetoric against Ukraine.

### **History of Nuclearisation and De-nuclearisation of Ukraine**

Ukraine was a part of the former Soviet Union until it achieved its independence in 1991. At the time of its independence, Ukraine was the third largest possessor of nuclear arsenals in the world. Following the disintegration of Soviet Union, there was an immediate discussion on the claimants of the nuclear arsenals of the former Soviet Union, existing in Belarus, Kazakhstan, and Ukraine. While the process of dismantling nuclear weapons in Belarus and Kazakhstan happened quite swiftly, there were contestations about denuclearising Ukraine within the internal leadership.

Post-independence, Ukraine has been a part of a number of treaties to deal with the nuclear arsenals that stayed in the Ukrainian soil belonging to the former USSR. Between 1992 and 1994, Ukraine was part of three significant treaties that shaped the current course of its nuclear decision- Lisbon Protocol 1992, Massandra Accords 1993, and Trilateral Statement 1994. The Budapest Memorandum was a trilateral treaty signed between United States, Russia and United Kingdom on 05 December 1994 to offer security assurances to Ukraine. By 1996, Ukraine handed over its entire nuclear arsenal to Russia in exchange of 'security assurances and economic aid'.<sup>2</sup>

The vision of the Budapest Memorandum was "to respect the independence and sovereignty and the existing borders of Ukraine" and "to refrain from the threat or use of force" against the country.<sup>3</sup> The idea behind this treaty was to contain the 1900 strategic nuclear arsenals that Ukraine possessed at that point of time. The geopolitical situation in 1990's was alarming due to the rise of global conflicts across different continents. As a signatory of the treaty, the US accorded highest priority to provide assurances to Ukraine so that the collapse of the USSR and the violent breakout of Yugoslavia do not led to conflict among nuclear armed states.

Under the treaty, Ukraine sought three assurances in lieu of giving up the nuclear arsenals. First, the highly enriched uranium in the nuclear warheads could not be used as fuels in the nuclear reactors. Ukraine sought for compensation on the enriched uranium which Russia agreed to provide. Second, since the Ukrainian economy was rapidly shrivelling, it could not afford to eliminate the ICBMs since it was costly. The US pledged to cover the costs. The third Ukrainian demand was the most crucial yet simple one. Ukraine wanted security assurances once the process of eliminating the nuclear warheads was over. The Budapest Memorandum pledged to provide that<sup>4</sup>. Unfortunately, Russia over the years has violated the Budapest Memorandum on multiple occasions, including the illegal annexation of Ukraine's Crimean Peninsula.

The Budapest Memorandum proved to be a sham for Ukraine as it was the sole ground on which Ukraine decided to give up its nuclear arsenals.

### **Do NNWS carry the fear of a nuclear threat?**

The essence behind the creation of nuclear weapons was to instil 'threat perspective' and alter power dynamics in international politics. After the catastrophic event of US dropping atom bombs in Hiroshima and Nagasaki, the international community has constantly lobbied against the existence of nuclear weapons. The NPT, which promises to provide security assurances to NNWS, has been unable to pursue its pledges. Within the security framework, NNWS are constantly fighting with nuclear anxiety from a probable attack by a Nuclear Weapon State (NWS). This is evidently the case of Ukraine.

The feeling of 'nuclear anxiety'<sup>5</sup> has impacted not just the NNWS, but also the NWS. While NNWS are in a state of constant fear that a nuclear attack will be fatal as countering the attack would be impossible; a NWS is equally fearful of a nuclear threat, as the retaliation to a nuclear attack would be catastrophic. Nuclear threat can be directed through two ways- Existential and Psychological. On paper, both Existential and Psychological threats may be interchangeable, however, there is a slight distinction. The Existential threat from a nuclear attack is the anxiety around the weapons per se, which is lethal not just to one's own self. It holds the power to destroy lands, languages, cultures, environment, and the future of human existence<sup>6</sup>. It is the actual threat of a nuclear attack.

The Psychological threat of a nuclear attack emanates from the Existential threat but is propagated through various mediums like press, social media, pressure groups, lobbying etc. It is the constant imagery and visuals that make people feel threatened about an entity that can destroy everything in minutes. On most occasions, the Psychological threat is the baton that NWS hold to intimidate the NNWS. This is vividly observed not just in the context of Russia and Ukraine but even in the case of North and South Korea. The persistence with which North Korea has moved with its nuclear armament has not just affected the region but has caused instability in international politics as well. With North Korea constantly threatening to employ nuclear weapons against US and its allies, the threat of a Nuclear Armageddon is looming large. North Korea's preoccupation with nuclear weapons has brought South Korea to brinkmanship to acquire nuclear weapons for its own safety.<sup>7</sup>

So, is nuclear rhetoric more intimidating than the actual attack? Russian President Vladimir Putin's implicit nuclear threat was a way to sham the counter offensive that Kyiv was implementing to push back Russians from their soil. It might not have been an immediate threat but the impasse is detrimental to the conflict that has prolonged for so long. Moreover, the Russian attack on the south Ukrainian nuclear power plant, Zaporizhzhya<sup>8</sup>, is viewed as the stepping stone to a larger doom lurking around. The harmful chemicals and radioactives from the shelling will impact the civilians who are already struggling to survive in the conflict zone. This opens up the room for yet another kind of nuclear threat- Nuclear Terrorism.

Following the attack on the south Ukrainian nuclear plant, the site has become prone to the threat of Nuclear Terrorism. This is threatening as non-state actors can get involved in this racket and the international nuclear system does not include non-state actors in its circle of discussions. The series of action that has followed post the attack on the nuclear site; like Russians halting the International Atomic Energy Agency (IAEA) investigations on the site has raised serious concerns on the authority of the NPT regime.<sup>9</sup>

### **NPT Regime: A Sham?**

By the mid-1960's, the US, USSR, Britain, France, and China started possessing nuclear weapons. The two superpowers were

already fighting the angst of the Cold War theatrics. A few disarmament treaties had been signed, the UN adopted the resolution to eventually eliminate nuclear weapons, and international organisations like IAEA were established to monitor the nuclear actions of these five states. With more countries beginning to acquire and develop their own nuclear weapons, the need for a more comprehensive treaty was felt to stop nuclear proliferation. The NPT of 1968 is the only nuclear treaty from the Cold War period that continues to exist even today. It is one of the documents responsible for providing both 'Positive' and 'Negative' security assurances to the NNWS.<sup>10</sup>

At the time of signing the treaty, the five nuclear countries had pledged to not threaten or use nuclear weapons against NNWS. However, in reality this has rarely happened. The Ukraine-Russia conflict has yet again highlighted the gaps in the NPT regime. Article I and II of the NPT<sup>11</sup> has barred the NNWS from receiving nuclear weapons and materials in any form, which practically closes the opportunity for NNWS to fight for their existence in case of a nuclear attack. The negotiation between the NWS and NNWS began with Positive Security Assurances. It introduced the idea of a 'Nuclear Umbrella' in which a nuclear state guarantees aid to a non-nuclear weapon state in case the latter is attacked by another state possessing nuclear weapons. This was easier to achieve both verbally and on paper. But this is not the case for Negative Security Assurances (NSA) in which a nuclear weapon state pledges not to use or threaten to use nuclear weapons against a non-nuclear weapon state<sup>12</sup>. Each of the five signatories to the NPT have pledged for NSA on different accounts, but none of them were legally binding and were limited in scope. There have been multiple accounts in which a NWS has failed its commitment to NSA. The case of Ukraine-Russia conflict is no different.

President Putin's nuclear rhetoric should be assessed through the decree that he signed in 2020, "*Basic Principles of the Russian Federation's State Policy in the Domain of Nuclear Deterrence*". In this decree, he clearly lays down the circumstances under which Russia will use a nuclear weapon. It states that Russia will use a nuclear weapon in case it is attacked by another state with nuclear weapons or other weapons of mass destruction. It further

states that “in the event of aggression against the Russian Federation with the use of conventional weapons when the very existence of the state is in jeopardy” Russia will use its nuclear weapons to secure the state<sup>13</sup>. The Russian government has used this framework to defend Putin’s nuclear rhetoric. So, how is this related to the NPT regime?

The NPT regime provided the scope for each of the NWS to develop their own nuclear policies. While it was supposed to halt proliferation and de-escalate nuclear weapons, it merely ended up supporting the needs of the NWS. So, is the NPT regime a sham? Well, it is a mixed bag of developments. While the Positive Security Assurances have been addressed and executed to a satisfactory level by the NWS, the same cannot be said about the Negative Security Assurances. The presence of NPT has at least provided a framework for addressing the behaviour and actions of the NWS in the international society to not create a threat perspective among the ‘nuclear have-nots’. It might not have been very effective because of its limited scope, but its importance in the nuclear security framework cannot be dismissed.

### **Cold War rivalry in Post-Cold War period: Superpowers vs Middle Powers**

The US and USSR emerged as the two superpowers after the end of the Second World War, which divided the world along ideological lines. The world was in splits as some joined either of the two blocs while the rest decided to adopt the non-aligned path. With the disintegration of the USSR, and the US ascending to its hegemonic power, it was believed that the world had moved from a bipolar to a unipolar system. However, even after three decades of the disintegration of USSR, the Cold War rivalry between US and Russia has continued to dominate the discussions on international security. Why is that so, especially since we now live in a multipolar world?

Throughout the 1900s, both the US and Russia worked extensively to make themselves militarily and economically strong. This cannot be replaced by any country without a strong build on military, economy, and soft power. The rivalry between the US and Russia may never cease, but their repercussions are borne by the Cold War allies.

In the race to win the most powerful country in the world and the constant struggle for power between these two Cold War rivalries, it is the former allies that face the consequences. Despite the end of the Cold War, NATO continues to exist, which clearly threatens the Russian security perspective. In response to that, Russia has employed aggressive politics, especially in the last decade, under the guise of protecting its own security. Russia has claimed that the attack on Ukraine has been propelled due to USA's attempts to install a NATO ally in Russia's immediate neighbourhood. In fact, the rationale behind Putin's nuclear rhetoric is also governed by this framework.

The role of middle powers in ensuring global stability is very significant. Even during Cold War, they played a significant role in mediating between the two blocs. Middle powers hold the key to leveraging between two powerful countries, but it can only be achieved through effective diplomacy and soft power negotiations.

### **Conclusion**

A nuclear rhetoric from a state that possesses nuclear weapons during an armed conflict is extremely dangerous. The danger is not just restricted to the involved parties in the conflict but is extended to other parties in the international politics<sup>14</sup>. It also opens up the space for non-state actors to take undue advantage to indulge in the larger gamut of Nuclear Terrorism. President Putin might have believed that his nuclear brinkmanship would force US and its allies to pressurise Ukraine into negotiating with Russia. Putin might have employed his nuclear rhetoric not for immediate action, but it does not eliminate the anticipation of a probable attack that looms large. He will perhaps use it to negotiate terms with Kyiv to keep the Russian-occupied territories.

Within the nuclear security framework, the Ukraine-Russia conflict has raised a number of questions, revealed the gaps in the NPT regime, and highlighted the dominance of Cold War rivalry that continues to impact the other states in international politics. There is no international system that addresses the nuclear issue with legally binding rules. The UN Security Council comprises of the same five countries that possess nuclear weapons and are part of the NPT. With P5 members possessing 'veto power', it is almost impossible to have a singular decision on the nuclear issue. Perhaps, the United Nations should perform its duty beyond that

of a watch dog and provide for a system that tries to reduce the nuclear anxiety that continues to propel. The international community, including academicians, scientists, politicians, lobbying groups etc., should come forward to propose a serious, legally binding document to address the issue of nuclear threat.

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# Enhanced Remote Sensing Based Airport Detection: A Military Detection

Lieutenant Colonel Puja Jha<sup>®</sup>

## Abstract

*Target detection is one of the significant areas of study in remote sensing which is gaining importance in the military field due to its pertinent applications. Airfields are example of one such valuable target having dual usage of civil and military applications. The primary infrastructure at an airport forms the interpretation keys for identification and analysis of this target in remote sensing data which have been deliberated upon in this article. The additional interpretation keys which are specific to a military airbase due to its additional & characteristic infrastructure are listed and considered in view of their inclusion in identification in satellite data. In this paper, the target detection methods are discussed first and then a review on various target-detection methods that have been qualified in identification of airfields have been deliberated upon. The challenges faced in detection of airports have been brought in light of advancements in remote sensing data acquisition.*

## Introduction

**A**irports are valuable strategic asset of a nation from economic as well as military viewpoint and are one of the leading forces in the indigenous, provincial, national and international economy. Transportation enables swift and easy movement of material, men and resources which plays a primary role in economic development of a country. The progression of transportation system from shipping, railways, highways and now airways has significant impact

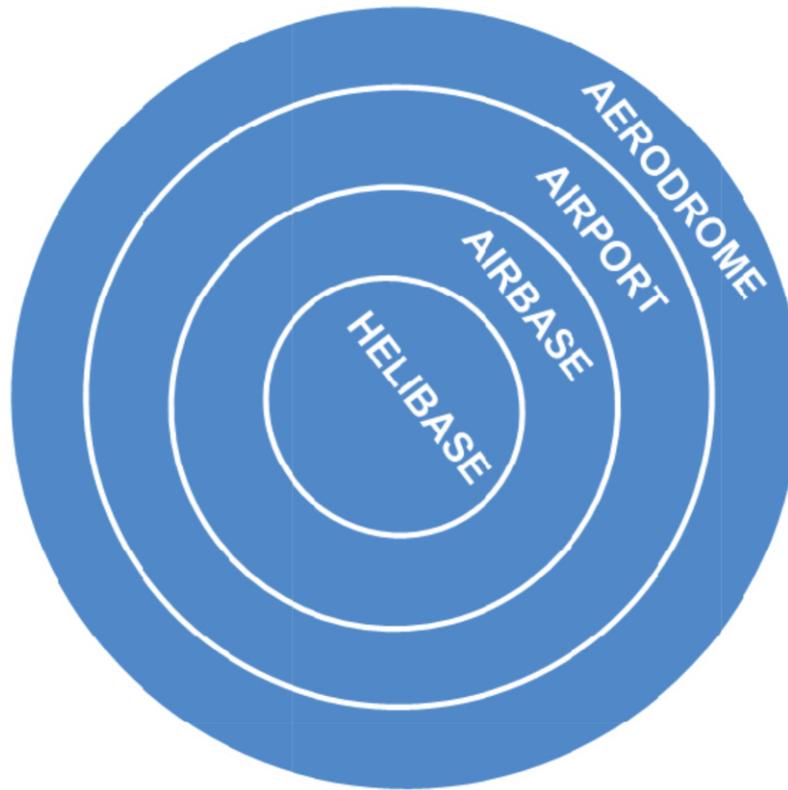
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in terms of financial returns to the economy. Airports form critical national assets thereby also serve as viable targets to disrupt an adversary's economic backbone, in terms of his war fighting capability hampering transport of troops, weapons and equipment and resources. Remote Sensing (RS) makes a decisive contribution to the independent and unbiased analysis of situations and present day combat operations, situational awareness has been extensively impacted by incorporation of RS data. Detection of airports from remote sensing data provides a lucrative target to the adversary that can majorly assist in disrupting enemy operations. All airports are national security assets & most airports are dual in nature (civil & military). In view of thrust on air transportation in present scenario to gain advantage of time, hampering of air operations will have a severe adverse impact on all successive operations. Availability of RS data in large volumes and of higher resolutions has increased the battle field transparency in large quantum and target detection methods based on RS data have also improved manifold. Airports form one such viable target that can be detected in more accurate ways in high resolution imageries based on various computing methods.

### **Aerodrome, Airport, and Airfield**

Aerodrome, airport, and airfields are few nomenclatures that are used interchangeably in parlance of air transport. But these are different in terms of the operations conducted and facilities available. An aerodrome is 'A defined area on land or water including any buildings, installations, and equipment intended to be used either wholly or in part for the arrival, departure, and surface movement of aircraft.'<sup>1</sup> An airport is a generalised idiom for aerodromes with supporting facilities like the shops inside the docks, the taxiways for the aircraft, control tower, hangers, terminals, taxi bridges, and aprons, primarily for commercial air transport. The airport facilitating only helicopters is a heliport. An airfield covers all areas of the aerodrome apart from the buildings/ terminals and parking and is also enclosed by the aerodrome perimeter. The airfield particularly refers to the runway and taxiways but it may not necessarily have terminals or paved runways.



**Figure 1 : Size-wise Aviation Facilities**

Airport is a complex infrastructure that has to accommodate aircrafts, passengers, cargo and ground vehicles. The layout of an airport is built according to the aviation authority norms / guidelines which include; topography of the area, physical facilities in an airport (aviation / non-aviation), dimensions, safety standards etc. Few other factors that are in consideration while planning the layout of an airport include; access requirements of an airport, effects on environment, development of land use around the airport, etc. The primary components of an airport include; runway for the landing or take-off of aircrafts, taxiway: a path for linking runways with aprons, hangars, terminals and other facilities, apron for parking the aircrafts, terminal building for all administration purposes and the passenger wait area, Air Traffic Control (ATC) for managing the movement of the aircraft, and hangars for aircraft parking and maintenance. The escalating demand for air travel and concomitant need for large transport aircraft also brings in the allied extensive

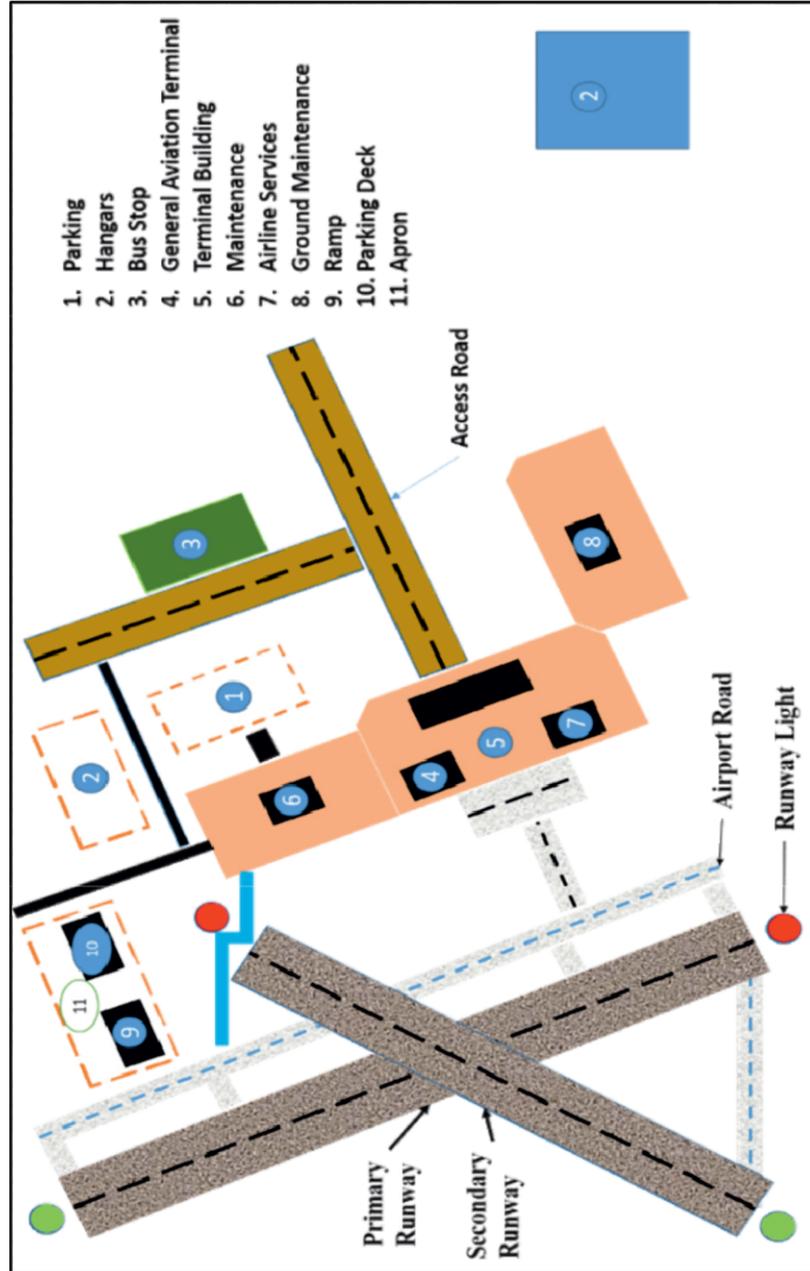


Figure 2 : Layout and Basic Components of an Airport

ground facilities, requisite runways, taxiways, fire-fighting and rescue services, passenger- and cargo-handling facilities, access to car parking, public transport, lighting, navigational approach aids, and a range of support facilities such as catering, meteorology, and governmental inspection and so on.<sup>2</sup>

### **Image Interpretation Keys: Airport**

All objects have a particular reflectance which is captured in RS data in particular ways based on the category and calibration of sensors. The basic infrastructure or components of an airport will also have these reflectance patterns and thus these components act as the image interpretation keys for airport identification in a satellite data. RS data based attributes that can be exploited to analyse these infrastructure as interpretation keys are discussed below.

**Runways.** Shape is the most distinct and primary interpretation key for identification of runways. Its significant dark texture reflected by the tarmac surface is another characteristic that can be analysed in optical imageries with regards to its high pixel values and or exploiting the thermal bands for its comparatively hot signatures as compared to background features. A linear feature of dimensional restrictions beyond a particular width and height, absence of curves, based on a flat terrain with open spaces around are additional attributes that can be added in the target detection model to narrow the search amongst features in spatial domain.

**Taxiways.** This component of the airport which has similar reflectance of a runway is shorter in length and appears like a connecting path ejecting from the runway either towards the parking space or interconnecting with other adjoining runway. Shorter length than of runways, curves in this feature, lighter pixel values than of a runway and wider than standard runway width are differentiation aspects that can be incorporated in computing models for better interpretation.

**Apron.** This part of an airport appears like a wider squarish or rectangular extension in satellite imagery mostly situated towards the exit area from flying spaces towards administrative areas of an airport. Signatures of parked aircrafts are the most remarkable interpretation cue for identifying an apron.

**Hangar.** Hangars give away the signatures of large asphalt or concrete material rooftops that are predominantly ridge-roofed or flat roofs with distinct heights. These structures are located in close vicinity of the runway preferably at either of the ends and connected with taxiways. Temporal analysis of satellite imageries giving away entry / exit of aircrafts into these structures can be identification cue in interpretation of hangers.

**Air Traffic Control.** The most prominent identification signatures of the ATC in RS data, is its height as it is one of the tallest structure in an airbase and also centrally location in the overall airport region. The shadow becomes a strong interpretation key due to the height of ATC.

#### **Distinctive Image Interpretation Keys: Military Airfield**

A military airfield has certain variations and additional facilities as compared to a civilian airport. Distinctive image interpretation keys for the military airfields are as mentioned below:

**Runways.** Presence of multiple (cross or parallel runways) and longer runway signatures can be seen military airfields, probably due to the redundancy and contingency hence acting as a prominent identification key. The Hyperspectral imageries can be utilised to detect any variations in the spectral signatures in the region for camouflage detection.

**Blast pen.** (Fig 2 (a)) These protective shelters for housing / safeguarding the aircrafts, are generally made of concrete hard structures over or underground. These structures can be studied with reference to different satellite sensors adding the factors of their proximity to the runway, connected via taxiways in a singular direction for effective detection. Presence of shadow at the mouth of the structure is another attribute that can be studied in the satellite imagery. As these structures are huge, it can be detected in the coarser resolution imageries where they are in the open.

**Bomb dumps.** (Fig 2(b)) These storage structures give away the signatures of symmetrical layout of buildings within a confined space with restricted access. The confined space housing group of building like structures similar in shape and size placed at considerable distance (equidistant at few locations) with absence of multi-floored structures co-located with some water signatures



Figure 2: Components of a Military Airport (a) Blast Pen (b) Ammunition Storage Site (c) Dummy Target and (d) Missile Launch Pad near an Airstrip

and comparatively more vegetation signatures than adjoining areas are cues for its interpretation keys.

**Missile sites.** (Fig 2 (d)) These sites reflect a pattern of hard standing bases of particular dimensions which are equidistant from each other and standardised in shape. Identification of such features can be clubbed with their proximity to airbases, radar signatures in Synthetic Aperture Radar (SAR) images and road connectivity with an administrative setup in vicinity.

Presence of Precision Radars, Training Areas, Dummy Aircrafts (Fig 2 (c)), and fuel storage tanks can also be analysed with respect to their spectral reflectance patterns, heat signatures and spatial extents in SAR / Hyperspectral Imagery (HSI) / Multispectral RS data as best suited in desired computing models.

### **Advance Computing Techniques for Satellite Data based Airbase Detection**

The advances in computing technologies have enhanced the target detection accuracy in all domains, RS being one of them. In recent years, Machine Learning (ML) algorithms, Artificial Intelligence (AI), Deep Learning techniques pertinent to target detection have made a great progress resulting in faster outputs with higher accuracy rates and requiring minimal human interface. Few broad heads of this computing domain are being discussed that can be modelled and styled based on input data characteristics which is RS data here.

**Machine Learning Algorithms.** Supervised and unsupervised learning, ensemble learning, neural networks form the major framework in ML algorithms. Naive Bayes and Support Vector Machine are common in supervised learning techniques whereas K-Nearest Neighbour and Principal Component Analysis (PCA) are predominant in unsupervised learning techniques. Object detection, Convolutional Neural Network (CNN), Logistic Regression, You Only Look Once (YOLO) and Single Shot Multi Box Detection (SSD) are mostly used in neural network zones etc.

**Spectral Signature Mapping.** Databank of spectral signatures generated as the interpretation keys can be exploited using different classifiers like Nearest Neighbourhood, Maximum Likelihood, CNN etc. These classifiers can be trained to classify the features based

of the spectral range of the features. Spectral Signatures can be varying due to numerous factors and it is preferable to club this with additional information to derive at conclusive results.

**Texture Based Approach.** Texture analysis mainly deals with four main issues<sup>3</sup> which are a) texture classification b) texture segmentation c) texture synthesis and d) texture shape. A statistical method of examining texture that considers the spatial relationship of pixels is the gray-level co-occurrence matrix (GLCM), also known as the gray-level spatial dependence matrix. Such matrices drawn for all requisite interpretation keys of an airport will be helpful in mapping.

**Shape Based (Geometric) Approach.** The shape of an object is denoted by its outer contour, which assists in providing information about that object and classification. Thus, studies have been made to pick features which can provide shape information for successful classification. Conventional maximum likelihood classifies each individual pixel, and object-based image analysis has aimed to move beyond pixels to objects comprised of many pixels (e.g., roads, buildings, parks). The approach starts with pixel classes, segments images based on pixel classes (e.g., grouping by polygon shape), and then conducts object classification based on the spectral characteristics of the object.<sup>4</sup>

**Deep Learning with Satellite Imageries.** Machine learning feature extraction is done manually and classification is done by machine. However, in deep learning both the feature extraction and the classification are done by machine as given. Different types of deep learning methods include Auto-Encoders, Stacked Auto-Encoder, Restricted Boltzmann machine, Deep Belief Network, Deep CNN models.<sup>5</sup>

### **Challenges & Possibilities**

The primary challenges in advance automated detection of an airfield based on RS data is selecting the correct feature or features that will be tested for its identification in a particular imagery. Runways are predominantly selected for automated airfield detection. But, airport runways different size and appearance in different imaging sensors, which cause challenges to automated systems. Apart from these aspects, the appearance of a runway during an approach and landing is intensely affected by

perspective.<sup>67 89</sup> There are other predominant features in the airfield which need to be exploited for specific and accurate outputs. Another major challenge is creating voluminous training datasets with clear demarcation of target and also considering the atmospheric and climatic changes in the area.

Multi- Sensor fusion is another domain to be explored; hyperspectral, SAR, thermal data with optical imageries could be utilised in combination in the available systems for higher accuracy rate of target detection.

### **Conclusion**

Conventional interpretation methods of identification of targets in RS data are being replaced by automated and semi-automated target detection methods and these can be utilised for detection of valuable targets like airports. Identification of correct and suitable infrastructure that can serve as robust interpretation keys in classifying of objects in RS data is a daunting task. At a progressive level, identification of interpretation keys that can identify category of an airport in terms of its operational parameters will further add to the prioritisation of its usage in military domain. Incorporation and exploitation of multi-sensor data and developing the match of appropriate sensor for analysis of appropriate target will be an achievement that will immensely affect the accuracy results of target detection. The mapping of runways based on advanced computing methods will be useful during crisis to detect airbases created at short notices in vicinity of international borders in times of crisis. Upgradation of interpreting skills combined with employment of specialised minimal human interface will be an efficacious derivative of implementing target detection techniques in the military arena. Gradual, continuous and increasing adoption of target detection techniques will be a stepping stone towards realisation of a fully automated modern army.

### **Endnotes**

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# How Geo-Strategy, Warfare and War-Tech have Changed in 2022: A Review of Events Which Shaped the New Paradigms of Warcraft

Mr Shaurya Dhakate®

## Abstract

*The year 2022 arrived with fresh opportunities and challenges for the world, transforming the way nations dealt with each other in the process of safeguarding their interests. The article looks back at the year to see how nations behaved in conflicts, what new strategic challenges emerged, and the development of new state of the art war-tech. It attempts to look at the events based on the level of significance they hold pertaining to the change in the global order, including territorial disputes, cyber warfare, war and recent development of war-tech. It concludes with the significant changes in the belief system around the world when it comes to how wars will be fought in the near future. These changes are a result of the paths that nations took in 2022 to gain strategic advantage over their adversaries.*

## A Categorized Flashback

The year 2022 witnessed most countries in the world starting to move on and trying to forget the losses suffered in the last two years of the Covid pandemic. The global economy suffered a great hit from the circumstances and the it might take years to recover. When the year 2021 came to an end, the pandemic started to wane making way for newer challenges. With the dawn of the new year, fresh opportunities and challenges awaited us, transforming the way nations dealt with each other, in the process of safeguarding their own interests. It is with this background that

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the article looks back at the year 2022 to assess how nations behaved in conflicts, what new strategic challenges emerged, and the development of new state of the art war-tech around the world.

To make comprehending the gravity of events easier, the article has colour-coded the events based on the level of their significance towards the changes in the global order. Yellow stands for territorial disputes not escalating to use of arms and the use of 'lawfare'. Orange signifies use of cyber warfare and hacktivism. Red, being a well-accepted code for danger, denotes use of firepower and skirmishes escalating to war and recent development of war-tech. To that end, the ensuing paragraphs will address every significant international event that has changed the meaning of the word we know as 'War'.

### **Red: Battles of Belonging and Modernisation of Arms**

**Use of firepower.** The month of February 2022 saw one of the biggest wars and significant human rights violations in Europe when Russia invaded parts of Ukraine beginning with massive fly-bys by fighters and bombers in Ukraine's cities and marching-in of tanks and BMPs from across the IB. The war has affected many countries adversely and has left a dent on the global economy in various sectors. The war in Ukraine was not the only use of arms that 2022 saw. In January 2022, a Saudi led coalition undertook air strikes in Yemen in response to the Houthis attack on the UAE. The attack employed precision guided munitions which were developed in the United States (US). One of the weapons used by the Houthi rebels was the Burkan-3. With the increase in flow of arms for non-international armed conflicts, advanced weapon systems have significantly grown in the inventories of various rebel and militant groups in recent years.

Much later, in August, with the visit of the US House of Representative's Speaker Nancy Pelosi to Taiwan, the People's Republic of China (PRC) demonstrated aggressive behaviour and military posturing in the high seas. Following Pelosi's visit, the Taiwan strait saw quick upsurge of tensions arising out of insecurity amongst the Chinese. "The Chinese leadership now believes that Washington is using Taiwan as a strategic asset to contain the mainland within the first island chain in the Western Pacific. In this context, Beijing has opted to use military means short of war—

such as live-fire exercises off the coast—to deter independence and to potentially prepare for non-peaceful reunification. The mainland has also used diplomatic, economic, and other tools to exert pressure—for example, by poaching Taiwan’s diplomatic allies, conducting cyber-attacks against the government, detaining Taiwanese politicians and activists, and imposing embargo on Taiwanese products”.<sup>1</sup>

Going back to February, the Russian invasion gave us amazing insights on what motivates leaders to take difficult steps when their national interests are threatened and what potential shapes modern territorial conflicts may take when things get chaotic. The present scenario of the war is what geo-political and international relations theorists call the ‘*spiral model*’, in which the parties to a conflict treat each other with equal hostility. These types of escalatory spirals can become very dangerous even though there’s no nuclear war. Till June, the Russian forces did not succeed in achieving full air dominance in the region; it lost what is believed to be more than 160 aircrafts which accounted for about 10 percent of its fleet. In the third phase of the war, the Kharkiv Region saw counter offensives by the Ukrainian side. Earlier, Ukraine’s use of arms and airpower was mostly defensive. The nation in the first two quarters of the year, was defending for survival whereas now it’s fighting for survival and the struggle doesn’t seem to stop in the near future. With Russian withdrawal from Kherson and its occupation by Ukrainian forces, the conflict is taking mysterious proportions.

**Developments in arms and war-tech.** The year saw birth and evolution of many arms and technologies. There is a race for introduction of newer weapons amongst countries, with plans to upgrade their airpower by modernising their equipment, in preparation for potential conflicts.

- North Korea in January tested a rail borne ICBM. “The missiles fired from rail cars appeared to be a solid-fuel short-range weapon, the North has apparently modelled after Russia’s Iskander mobile ballistic system”.<sup>2</sup>
- Tu-160M ‘White Swan’ strategic bomber was unveiled by Russia. The strategic importance of this addition is huge to the country keeping in mind its recent confrontations and for any possible conflict with NATO forces in the future.

- Israel's C-Dome defence system is the naval variant of the Iron Dome Air defence system, which is an all-weather system, used to intercept and destroy short range rockets and missiles.
- Launch of NROL-85 US Reconnaissance Satellites by Space-X was conducted in April 2022. "NRO Launch 85 (NROL-85) is the fourth dedicated Falcon 9 mission that SpaceX will carry out for the National Reconnaissance Office (NRO)".<sup>3</sup>
- German KF-51 Panther Main battle tank was unveiled in 2022; the 'Panther' is a lethal, highly protected, and fully digitised piece of equipment.
- BAS-750 Unmanned Helicopter is developed by Russian company Rostec. It can do long range communications and has capability to carry heavy payloads while flying for long distance and long duration.
- Autonomous Flying Wing Technology Demonstrator is developed by the DRDO, and flew its maiden flight in July 2022. It is India's new indigenously developed UCAV. It operated in full autonomous mode and was a stepping stone for the fully autonomous aircraft to be built in the future.

### **Orange: From Fire-power to Wire-power**

We may recall that in the initial months of the year, a novel virus, this time a software virus and not a biological one, was gaining popularity. The Pegasus spyware, of Israeli origin, was said to be infiltrating into IT devices of politicians, military personnel and journalists, posing a privacy breach as well as a risk of leak of official secrets and confidential information concerning national security. In late January, the Global cyber security outlook released by the world economic forum stated that ransomware attacks increased by 151 percent, making cyber space an even more dangerous place to be in, not only for the netizens but also for the governments. Later, in February after the war began in Europe, the hacktivist group '*Anonymous*' declared a cyber-war against Russia and targeted its various e-assets and digital infrastructure.

After 1991, the global conflict underwent a metamorphosis and hibernated under the layers of software and algorithms. Since

then, the world has been exposed to the nefarious threat to international and psychological peace - cyber threats. Internet was born in 1983, only to see the first virus in 1986, just three years after its birth. The jump in technological advancement is infinite with no zenith of sophistication. It is never certain what kind of technology would be developed to eclipse its predecessor, but it is always certain that a counter-tech will emerge to give the former one a death blow. Unregulated money transfers, digital currency transfers, and data transfers concocted opaque corridors made of algorithmic cement to ensure concealed conduct of capital during conflicts.

In December 2021, there was a breach of security of four US Defence and Security firms by a Chinese hacker group in order to intercept sensitive and classified communications. In March 2022, “Hackers linked to the Chinese Government penetrated the networks belonging to government agencies of at least 6 different US states in an espionage operation. Hackers took advantage of the *Log4j* vulnerability to access the networks in addition to several other vulnerable internet-facing web applications”.<sup>4</sup>

In April 2022, Chinese hacker group targeted about seven power grids in north India, similar to other past attacks which targeted critical infrastructure and sectors like defence and space. “US based cyber threat intelligence company, Recorded Future, released a report saying it had found evidence that at least seven Indian State Load Dispatch Centres (SLDCs) and an Indian subsidiary of a multinational logistics company were targeted by a China-linked group that it has codenamed TAG-38”.<sup>5</sup>

“If it were measured as a country, then cybercrime — which is predicted to inflict damages totalling \$6 trillion USD globally in 2021 — would be the world’s third-largest economy after the US and China. Cybersecurity Ventures expect global cybercrime costs to grow by 15 percent per year over the next five years, reaching \$10.5 trillion USD annually by 2025, up from \$3 trillion USD in 2015. This represents the greatest transfer of economic wealth in history, risks the incentives for innovation and investment, is exponentially larger than the damage inflicted from natural disasters in a year, and will be more profitable than the global trade of all major illegal drugs combined”.<sup>6</sup>

Cyber espionage is the most widely used and quotidian variant of this group of pathogens. Nations always wanted to eavesdrop on adversary's policy making portals; this is the way it's done now. This often involved using botnets and spear phishing to target systems. These are very similar to the MITM or 'Man in The Middle' attacks. Spear phishing can be distinguished from regular phishing as the former targets an individual whereas the latter uses a broad strokes approach, often through emails and apps. When heads of governments or important organisations are targeted, it is referred to as 'Whale-Phishing'. "A Russian organised cybercrime group, Fancy Bear, targeted Ukrainian rocket forces and artillery between 2014 and 2016. The malware was spread via an infected android application used by the D-30 Howitzer artillery unit to manage targeting data. Ukrainian officers made wide use of the app which contained the X-Agent spyware. This is considered to be a highly successful attack, resulting in the destruction of over 80 percent of Ukraine's D-30 Howitzers".<sup>7</sup>

When such penetration techniques aim to bring down certain electronic infrastructure or equipment, they are called Cyber Sabotage. Siblings of it are the Denial of Service (DoS) attack and the Distributed Denial of Service (DDoS) attack, which can not only cause disruptions in a system but can block others from operating it. A very notorious example of this is the Stuxnet virus. "Stuxnet was a worm that attacked the Iranian nuclear program. It is among the most sophisticated cyber-attacks in history. The malware spread via infected Universal Serial Bus devices and targeted data acquisition and supervisory control systems. According to most reports, the attack seriously damaged Iran's ability to manufacture nuclear weapons".<sup>8</sup> The end manifestation of this attack is a kinetic energy damage.

Another species is the Structured Query Language (SQL) Injection attack. "SQL is the code used to communicate with a database. In an SQL injection attack, the hacker writes vindictive SQL code and inserts it into a victim's database, in order to access private information".<sup>9</sup>

These virtual attacks on people, groups, society, nation, or humanity as a whole can actually be placed in 'red' category as they possess the power to control the use of nuclear weapons/energy and cause disruptions in air, maritime and space domains

at any point of time. But neither are these capabilities visible nor have they been employed in large scale as yet and the year has only seen such capabilities being used either as a trial or to satisfy geo-political and activist agendas.

### **Yellow: Geo-political Tussles and Lawfare**

This part of the analysis explores various issues that emerged during the year pertaining to territorial disputes, maritime conflicts, boundary issues and most importantly Lawfare.

#### **People's Liberation Army (PLA) at the Borders and High Seas.**

India faced challenges arising out of boundary disputes with China and its increasing presence in the Indian Ocean Region (IOR), which it is aiming to strengthen by doing bilateral pacts with nations in the IOR. In January, it was reported that China was building a strategically important bridge at the Pangong Tso Lake. The site of construction was approximately 20 km from Finger-8 of the lake and it is east of the Khurnak Fort. The bridge is at the narrowest part of the lake and connects the two sides, which, when completed, will make crossing of tanks and armoured vehicles of PLA easier and faster. This move came out of the standoff that began in May 2020 and in retaliation to Indian Army occupying the heights of the Kailash Range in the Chushul Sub-sector on the southern banks of the lake. This move gave Indian Army a clear view of China's Moldo Garrison (military base).

In April, China signed a strategic pact with the Solomon Islands which evoked protests from Australia and the US. "The relationship between the world's most populous country and this Pacific archipelago of 700,000 people was thrust into the spotlight this year when word leaked that they had struck a secret security agreement. The United States and its allies fear the pact could pave the way for the establishment of a Chinese military base in the strategically valuable island chain".<sup>10</sup> Further, the presence of the Chinese surveillance ship at Hambantota, despite diplomatic protests from the Indian Government, is an indication of the Chinese influence in our littoral neighbourhood.

**The Nord Stream 2 pipelines.** It has been in the news a lot in 2022. The 1,234 km long natural gas pipeline runs from Russia to Germany through Baltic Sea. There were several warnings issued by Moscow to Berlin of stopping the pipeline to warn it of the

increasing interference in Russian operations in Ukraine. Towards the end of September, authorities of Sweden and Denmark said that there were a number of explosions at pipe A of Nord stream 2 and pipe A and B of the Nord Stream 1 pipeline, which caused significant gas leaks. “The European Union considers the incident to be intentional sabotage”.<sup>11</sup>

In the geo-political and geo-strategic parlance, the F-16 fleet sustenance package deal between the US and Pakistan might be a move to rescind the Trump-era ban to extend aid and indulge in arms deal with Pakistan, but it brings challenges for both the parties in the global arena. New Delhi is pressurising Washington to reconsider its plan to go ahead with the US \$450 million deal as it might give Pakistan an upper hand in any future aerial combat with India, especially in case India has a two-front war with China and Pakistan. Pakistan Air Forces’ Falcons are already a good match for IAF’s fleet, which they now seek to upgrade and extend the life through a sustenance package, adding punch to versatile and potent machine. The past deals and the future ones involve advanced targeting pods and electronic warfare pods, which might not be necessary to fight the terrorist groups in the subcontinent as no group has in their possession a 4+ generation fighter which fights with electronic warfare.

Today, using law as a weapon for achieving ulterior motives is no doubt a cunning move. Many nations are relying on using loopholes in international laws to stop the developing and underdeveloped nations from growing their economies and militaries.

China likes to follow the old playbooks and stringently follows the Sun Tzu maxim that ‘*defeating the enemy without fighting is the pinnacle of excellence*’. The PRC uses law as an instrument to destroy its adversaries, which increased significantly in 2022. It used it belligerently in the South China Sea through which almost one-third of the world’s maritime trade passes. Xi’s increasing lawfare has been receiving very minimal global outrage, even after many nations are aware of its passive impact. Another example is US’s Countering America’s Adversaries Through Sanctions Act (CAATSA), which is a federal law and through which Washington DC can impose sanctions on any country which has ‘significant transactions with Iran, North Korea or Russia’. It has come to limelight after the Ukraine war, and when the US warned

India that it'll impose sanctions on it for purchasing Russia's S-400 surface to air missile system. However, CAATSA waiver in the case of India was approved by the US House of Reps on 14 Jul 2022.

### **Conclusion**

There have been significant changes in the belief system around the world when it comes to how wars will be fought in the near future. These changes are a result of the paths that nations took this year to gain strategic advantage over their adversaries. The heavy use of fire arms in the Russo-Ukraine war made the world apprehensive that if the conflict escalates to a world war, would the nuclear-powered nations be compelled to launch their nuclear arsenals. In the first quarter of the year, when talks and diplomatic efforts failed to stop the war in Ukraine, the hope of peaceful resolution of disputes slowly started vanishing and with increased deployment and use of firearms in other parts of the world, it completely disappeared. The year saw recurrent firing of ICBMs by North Korea, airstrikes in Yemen, violation of international laws by China over the airspace and maritime domain of Taiwan with continued geo-political and strategic issues in Europe over the Ukraine war.

The cyber space is another war zone which lit up this year. The fact that it did not come into the limelight a lot is because it does not have direct consequences on the lives of people. Manipulating this, the PRC targeted various high value infrastructures in India and abroad. If these attacks were not stopped at the right time, they would've been in the news for a longer time and the trajectory the events of this year took would have been different.

Tomorrow's wars will involve some of the greatest technology that man has developed so far, since the greatest inventions of humankind were born during conflicts. When countries strive for their survival, the best minds and the best resources are coupled together to bring new weapons and their counter-shields to the world, be it physical or virtual.

A lesson that remains with us after this analysis is that in the coming decades, waiting for slow build-up of conflict may not happen and that conflicts could erupt after certain redlines are

breached. We have seen Russia getting insecure of losing its 'buffer zone', which separates it from direct contact with NATO, and China going berserk after Nancy Pelosi's visit to Taiwan.

Another lesson that emerges from the Russo-Ukraine conflict is that nations have to fight their wars on their own, with, maybe, some external support from its allies or those who have a direct involvement in giving a certain direction to the conflict. A final lesson that emerges is that nuclear sabre rattling will not go down well with any nation, including iron-clad allies and the world in general abhors those who threaten nuclear attacks. A nation which uses even the low-yield TNWs, is likely to become a pariah in the world. Only conventional kinetic and non-kinetic power may be acceptable in warfare.

*“El poder es unacombinacion de todosloselementos de unaestructura, la debilidadencualquier element puede conducir al colapso total de la estructura”*

*(Power is a combination of all elements of a structure, weakness in any one element can lead to total collapse of the structure).*

### **Endnotes**

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<sup>3</sup> William Graham, Falcon 9 launches NROL-85 mission for National Reconnaissance Office, April 17 2022, NASAspaceflight.com

<sup>4</sup> Centre for Strategic and International Studies, Significant Cyber attacks since 2006, <https://www.csis.org/programs/strategic-technologies-program/significant-cyber-incidents>, accessed on 03.05.2022.

<sup>5</sup> Binayak Dasgupta, Hindustan Times, “Chinese hackers targeted 7 Indian power hubs, govt says ops failed”, April 08 2022. Accessed on 03 04 2022.

<sup>6</sup> Steve Morgan in Cybercrime To Cost The World \$10.5 Trillion Annually By 2025, November 13 2020, cybersecurityventures.com, accessed on May 06 2022.

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<sup>10</sup> Michael E. Miller, "China's growing reach is transforming a Pacific island chain", August 11, 2022, The Washington post.

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# Political Failure, Military Success: Sri Lanka's Economic Crisis of 2022

Ms Radhika Daga<sup>®</sup>

## Abstract

*The institution of law and order, along with the financial system, collapsed in Sri Lanka in the summer of 2022. This took place in two stages, with the elected government losing its legitimacy, followed by the failure of the law enforcement agencies to curb the escalating situation. In developing countries, military forces are often called upon to establish normalcy whenever law enforcement authorities fail or require assistance to maintain the law and order. However, once they are called for action, the operations need to be orchestrated meticulously as it could lead to more violence during turbulent times. In the Sri Lankan context, the nation recently saw a wave of unprecedented protests from its citizenry. People belonging to various communities, groups, societies, and professions took to the streets demanding essential commodities such as fuel, gas and electricity. The situation became extremely tense once the protesters blocked the entrance of the presidential secretariat and occupied area around the premises.*

*The Sri Lankan Army was called upon to restore security amid the increasingly deteriorating security situation. While the army brokered security between the angry citizens and the political leaders gone wrong in their decisions, they faced a double dilemma.*

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*At a strategic level, how can the army serve the government without alienating its own people and at the operational level, how can the military aid in a non-violent manner without actually using firepower on its own people? That is, using non-violent means to deter a largely non-violent movement, a 'bloodless revolution'.<sup>1</sup> From security point of view, a study and analysis of these military operations in a modern-day revolutionary movement will have great relevance for other militaries, especially in the developing countries.*

### **Guardians of the Island**

Since the beginning of public outrage against the incumbent Rajapaksa Government, the Sri Lankan Army worked closely with civil security agencies like the police and Special Task Force (STF) to maintain law and order in the country. Apart from upholding the societal order, their efforts were concentrated towards the security of the key strategic installations, the functioning of local administration and public distribution while preventing any opportunity to the unlawful elements. However, public discontent was rising steadily, and a full-scale unrest finally broke out in the month of April 2022. On 01 April, protestors attempted to storm the President's Pavilion occupied at the time by the then President Gotabaya Rajapaksa.

With increased hardships and declining patience amongst people, the situation continued to grow tense and the military's role gradually shifted from security assistance to leadership. Once again, the armed forces assumed the role of the ultimate guarantor of law and order as it did just a few years ago in the aftermath of the April bombings of 2019. The government imposed a nationwide emergency for the first time on 02 April 2022, against what was a failed attempt at calming the rising anguish of the population. The political security of the nation, encompassing issues related to law, democracy, history, culture, civil liberties and security of its citizens was at stake.

The nature of the protests remained largely non-violent and non-ideological, that is, they were driven by economics rather than political ideology of the authorities. Various communities,

groups, societies, and professions participated in these protests and re-asserted its apolitical nature. Their demand was clear- the resignations of the then President, Gotabaya Rajapaksa, and Prime Minister, Mahinda Rajapaksa. Notwithstanding the objective set by the protesters, this presented an opportunity for certain people to use this volatile situation to their own advantage.

Some senior military officers noted that notwithstanding the genuine frustration of the people, the show was run by the few invisible and unlawful elements, leaders and coordinating bodies, who became the agents of disharmony. To this end, they used the most modern and advanced tools available at their disposal. Internet activism was effectively used to stir up the masses. Active and consistent use of social and mass media ensured the engagement of popular and professional personalities. Simultaneously, the engagement of religious and community leaders was also seen. The vulnerability of the general public was exploited and widely capitalised upon. Despite the scarcity of fuel, more than 100,000 protesters descended in the capital, Colombo, to demand the President's resignation.

Concurrent use of physical information and communication technologies (ICTs) was fully integrated into the strategy for island-wide mobilisation and synchronisation of activities. Targeting VVIPs and their supporters, and inciting violence and unrest, reiterated the ban on internet and control of information by the state. On 09 May, supporters of Prime Minister Mahinda Rajapaksa emerged from the premier's residence and attacked anti-government demonstrators. This set off an outpouring of rage across the country. There was rioting on the streets, vehicles were set alight, and the homes of members of the ruling party were burned to the ground. Within no time, people gathered on the streets and created roadblocks. Vehicle numbers were shared and stopped at locations spanning across the country. The political leadership had not correctly estimated the magnitude of the protest until this point.

The weakened governance, administration, and economic system in the country aided this intent of disturbance and retaliation. Officers on the ground observed that the use of social media was not only limited to provoking public sentiments but also for defaming the military and military leaders. Mainly called on to police public unrest, they found themselves pitted against their own people, the

targets of anger, frustration and despair, reaction, and repercussions. The whole movement was further catalysed by funding from diaspora- demonstrations against suppression of human rights and anti-government organisations followed abroad. Hashtags such as #GoHomeGota and #GoGotaGo trended on Twitter in countries such as the United States, Singapore, and Germany.

### **With Great Power comes Great Responsibility**

As per the Constitution of Sri Lanka, in case of emergency, the military is allowed to take action against those who threaten the law and order of the country. Thereby, the very nature of military actions was limited not only by ways of morale but by the very constitution.<sup>2</sup>

Even though the non-lethal ways of the law enforcement agencies failed, the army still could not apply the lethal ways for controlling the situation. In fact, the army refrained from use of any violence against the people for it would have not only been counterproductive but explosive in the existing setting, which posed a grave dilemma for a voluntary professional force whose members are deeply embedded in society and government alike. Even as the military defines and designs a set of austerity measures to reinforce security under the state directives, both political and military leadership must be aware of the potential spoilers on the way. The civil use of military force implies non-combat principles of unity of effort, legitimacy, perseverance, restraint, and security or what constitutes the principles of Military Operations other than War (MOOTW).<sup>3</sup>

By nature, civil security agencies are limited and restricted both in scale and capacity. Being a larger force, the military is, therefore, entrusted with the task of deterring the enraged mobs through snipers and marksman as opposed to shooting in the air or confrontation with water cannons and tear gas. However, the legitimacy and dignity of this force is upheld solely through careful planning and specific deployments. Here, it must also be noted that MOOTW demands a significant chunk of army's resources, putting a strain on the military exigencies. Usually different units are earmarked for different operations. Therefore, the army's role remains need driven and a little more than ad-hoc.

For instance, the military's role cannot be to disperse crowds but to protect the key installations vulnerable against a possible outrage. In case of a confrontation, a single slip-up or, worse, a casualty can defame not only the military but also the national leadership and aggravate the already agitated mob, simultaneously attracting negative international attention. Moreover, use of lethal means by the military can call for an uncalled state of confusion where everyone gets down in the battlefield without any rules of fighting.

The mission statement which guides the army is 'Do Not Disturb', i.e., as long as the protesters do not threaten public and private property, they should not be disturbed. The strategy is not to win the war but to prevent war or a warlike situation. This mostly entails deterrence through intimidation. For instance, the protesters formed massive human waves to force their way past the barricading around high-security areas. However, once the barricades were overrun, the army and police stood by and watched. The only situation in which deployment of lethal means can be justified is when there is a threat to life. This required to be aided through with improvised technologies. For example, during the on-ground operations, the military used GoPro and other supportive technology to collect evidence and justify any action which might go against them. Legal institutions allow digital evidence to be produced in the court. This also helps to prevent any act of provocation for justification of violence or incitement.

### **Messing with the Wrong Generation**

The Aragalaya ('Peoples Struggle') was largely led by the youth who descended to the capital from all across the country. Determined to make a change, crowds assembled in the heart of Colombo city at the Galle Face Green, the magnitude was unprecedented, and the authorities were blatantly challenged- "You have messed with the wrong generation". The present-day civil society leveraged ICTs to create awareness, transparency, and accountability on every incident; to recruit, mobilise, organise, coordinate, monitor, educate, and empower the public; and to expose wrong doing through 'sousveillance' (watching from below).<sup>4</sup> They successfully demanded political accountability and unseated the President and the Prime Minister in a bloodless revolution.

What happened on 09 May was illustrious of how integrated and vigilante the public was in this fight. A single incident in one place led to the outbreak of violence all across the country. Within no time, people gathered on several key roads and blocked the vehicles of the government supporters, who allegedly attacked protesters. Things moved much more swiftly than expected as the crowds leveraged crowd sourced open source intelligence to coordinate their actions. As soon as the Prime Minister resigned, legal practitioners timely imposed a travel ban against parliamentarians and the Prime Minister to stop them from leaving the country.

Apart from communications technology, it was discovered that people made use of drones for surveillance against the movement of political leaders in the government. The wave of protests was not restricted to holding placards or shouting slogans. The protesters were intellectual, technophiles, funded, analytical, prepared, and evolved. The capabilities of this generation couldn't be underestimated to say the least.

### **Military's Counter-strategy of Minimum Force against the Mob-doctrine**

The actions, deemed essential to counter the modern revolutionary activities, were guided by a more humane approach. The following paragraphs explain these measures in the words of the officers who served and led their men into the field:

- Understanding the context and the bigger picture: The Sri Lankan Army had to transition away from the traditional means of controlling a mob that was hardening by the day. This developed into a range of measures to counter modern day conflicts taking roots in the society. Through means of surveillance and intelligence gathering, the army pre-empted any hostile situation even before it directly dealt with the public anger. Readiness, as an imperative, is to look for smoke which can possibly flare up into a fire.
- Non violent and non-lethal counter actions: Not a single person had been killed in army gunfire. However, the security personnel faced a challenging and deciding situations. Even after the President stepped down on 14 July and Ranil Wickremesinghe took over the reins of government as the

acting President, the crowds torched his house later on the same night. Wickremesinghe's appointment, although constitutionally validated, was greeted with howls of anger across the country. And once again, the new government called on the military to maintain law and order and protect the Constitution. The protestors, in turn, vowed to continue their struggle.

- Use of (social) technology: In one of the fables from Greek Mythology, Prometheus steals fire from Zeus to emancipate humans from their materially impoverished lives, wholly dependent on the gods for sustenance. As punishment, Zeus condemns Prometheus to an eternity of suffering—an eagle pecking out his liver every day only for it to be restored every night. Drawing on this analogy, and sceptical of the promised positive benefits of technological advances, a German-Austrian author cum philosopher argues that society is unable to imagine the scale and scope of the negative consequences of contemporary (physical) technologies. The inclination to turn to further physical technological advances (e.g. artificial intelligence or deep learning algorithms to police social media content) to address the societal problems created by prior technological developments results in a continuing feedback loop of negative social impacts.<sup>5</sup>
- These negative impacts are identified by the security authorities and countered best by the means of social technology. These are technologies aimed at enabling social interactions, through the social software, which allow shaping the attitudes and processes. For example: A sound social media strategy played a crucial role in winning the confidence of the people, who might have misunderstood the army as a threat to their demands. This strategy meandered between control and over-control. Prolonged social media blackouts were inimical to the cause, but further restrictions had to be saved for critical times. Social media was used to gain access and confidence of the public by disseminating information. Information feeding was used to assure the people about the military's objectives and stand for its citizens. The same platform which is used by some to spread hate was used by the military to avert hate.

- Deterrence: A patient pushback strategy dictates that human barriers be used against large mobs, which are pushed back slowly and gradually. In such a situation, the troops need to be prepared for any provocation or retaliation against the military ethos. A highly integrated and technologically sophisticated intelligence, surveillance, and reconnaissance play a central role in such operations. The correct estimation of the magnitude and moods will decide the course of action in any given situation. When the ball is in the military's court, it must be carried to the aforementioned goal, for there is no room for penalty for pushing the ball outside.
- Proactive intelligence: One of the primary goals remained engaging and neutralising the unlawful elements of the society, who were likely to continue exploiting the growing tensions between people and government. The violence is fuelled by these very people who mostly operate behind the scenes through social media, illegally organised underground networks etc. Therefore, the army personnel on the ground only dealt with the body and not the mind of this whole movement. Cracking this network and ensuring the citizens that they stand by their security and rights helped channelize the pent up.
- The control over the non-traditional security threats needed to be regulated. The modus operandi of the protesters was closely monitored and analysed as while assuming such a big responsibility, no step could have been taken without a purpose. A clearly defined and attentive objective had to be pursued.
- Integrated mechanism between law enforcement authorities and military: Beyond, and above all, the management and procurement of the already scarce resources also fell into the hands of the army leadership now. Notably, the country, which was at best a society on the edge, could not afford to disrupt its local distribution system at those times. The safety of local administration also remained a priority of the security forces and was deployed accordingly.

### **Conclusion**

Although the number of casualties remained limited, clashes broke out between police, the army, and those waiting in the queues, for

example, at gas stations. One may debate that the security agencies failed on their part to protect the government institutions with the eventual resignation of the President. After the President fled the country, the public trespassed his residence and ensured that the internet was used as a medium to announce their right on the President's residence.

However, to answer whether the security agencies failed or not, one must look only in the direction of the Constitution because ultimately the security forces in any democratic country serve the Constitution and not its government or the public. Its roles and responsibilities are prescribed by the Constitution and not by any one of the institutions. This means that the forces are answerable to the Constitution alone and according to that very Constitution they stood by their duties and orders to prevent violence, control hostilities and return to peacetime conditions. The Constitution remained untouched by both internal and external disruptions.

### Endnotes

<sup>1</sup> Sinharaja Tammita Delgoda, "SRI LANKA: A Bloodless Revolution?," *India International Centre Quarterly* Volume 49, Number 2 (August 2022): 125

<sup>2</sup> In Sri Lanka, much different from other post-colonial armies, there has never had a separate military culture. There are no separate residential areas like cantonments, or separate schools for army kids.

<sup>3</sup> "Military Operations Other Than War," [shorturl.at/mxBS7](https://shorturl.at/mxBS7)

<sup>4</sup> Jarrod Hayes, Katja Weber, Globalization, deglobalization and human security: the case of Myanmar, *International Affairs*, Volume 97, Issue 5, September 2021, Pages 1469–1488, <https://doi.org/10.1093/ia/iab110>

<sup>5</sup> *ibid*



## **Book Reviews**



**Drifts and Dynamics: Russia's Ukraine War and Northeast Asia.** Edited by *Sriparna Pathak and Manoj Kumar Panigrahi*; (Pentagon Press LLP, New Delhi, January 2023), Pages: 152; Price: Rs 995; ISBN-9390095643

It is a war no one expected and it is difficult to fathom its full consequences. With Russia unable to secure an easy victory and Ukraine failing to mount unbearable costs on Moscow, the conflict has blurred strategic signaling with no clear red lines. But it has shot up, in an unprecedented manner, energy and food prices, seriously affecting almost all the world.

The Russian invasion has also led to several tectonic changes not only in Europe but also in the rest of the world. Indeed, the Russia-Ukraine conflict, which began on 24 February this year but shows no early signs of ending, is threatening to engulf the whole world. Acutely affected is the Northeast Asian Region, which is home to China, South Korea, North Korea, Japan and Taiwan. This book, by mostly young experts, explores the region's dilemma and answers some tough questions in the wake of the war.

China, increasingly showing absolute lack of respect for set global norms, has neither publicly supported Russia's war nor denounced the military assault on Ukraine. As Sriparna Pathak says China may not have been aware of Putin's plans for Ukraine, but the war has proved that Moscow and Beijing have found a large ground for alignment against the West. China echoes all the Russian claims about the war.

Diplomatically, China is purposely maintaining ambiguity. Its promises to send humanitarian supplies to Ukraine are dubious because it is an attempt to cover up its lack of neutrality in the fighting. China relies on Ukraine for a significant portion of its food security, and Ukraine is also an important country in Beijing's dream Belt and Road Initiative project. Naturally, it does not want to completely burn its bridges with Ukraine. But there is definitely collusion between Russia and China in trying to orchestrate an alternative model of international relations.

Manoj Kumar Panigrahi warns that Chinese leaders have more to lose if they try to use force against Taiwan at this current stage. Given Taiwan's hold over semiconductors globally, an armed conflict between Beijing and Taipei will create ripple effects

worldwide. Taiwan has been under tremendous pressure ever since Xi Jinping took power in China in 2013. Xi's rule has, however, seen an increasing number of Taiwanese companies quitting China. If this trend continues, India could emerge as an alternative to Taiwanese business manufacturing units now in China.

South Korea's worry is the kind of impact Russia's invasion of Ukraine will have on North Korea's designs in the Korean Peninsula. The Ukraine war has reinforced the North's idea that it must develop its nuclear arsenal to protect itself as support from China is considered unreliable. Jettisoning the past, South Korea has taken a strong stance vis-à-vis Russia over the Ukraine mess. PalakMaheshwari feels this is South Korea's long-awaited middle power moment; Seoul has a unique chance to leverage the Ukraine crisis to polish its foreign policy by taking on a more significant leadership role in the global sphere.

After what happened to Ukraine, can North Korea denuclearise? Ashu Mann underlines that the Russian invasion has further emboldened the North's claims to nuclear weapons as a necessity for survival. After all, regime security has always been paramount to Pyongyang. By 2027, the North could have around 200 nuclear weapons and hundreds of ballistic missiles in its stockpile. And unlike in the Cold War, Russia may no more support denuclearisation.

The Ukraine conflict has sparked plenty of worries in Japan – on what China may have in mind for Taiwan or the Senkaku islands. After the Russian invasion, Japan took the unprecedented step of announcing that it would accept refugees and even sent bulletproof vests to Ukraine. According to Ashutosh Kumar, there is a realisation that Japan cannot take its national security for granted. While the crisis may not herald a sea of changes of in the overall Japanese security architecture, it does make a turning point in policy towards China and Russia.

Nishant Dilip Sharma exposes the cyber warfare and disinformation campaign by Russia and China. Several attacks were initiated in January and February this year on government and civilian organisations in Ukraine before the start of the war. They were well planned, targeted and coordinated but they failed to achieve their strategic objectives. There is also ample evidence of a Russia-China alliance on the disinformation front. The Chinese

state media has been adopting Russian propaganda without due fact-checking. For China, exposing the so-called Western hypocrisy has become the perfect tool to hide Russian human rights abuses in the battlefield.

What is clear is a strong Russia-China axis which is bound to bring about profound global changes. The European security architecture has undergone strains not seen since the Cold War. Whatever the war's outcome, Europe's security and deterrence with reference to Russia would undergo significant changes. Moscow, argues Sukanya Bali, has primarily challenged the stability of Europe, which might leave a revisionist Russia once again in isolation. This at a time when China has emerged stronger after the Covid-19 pandemic than almost all other countries.

*Mr MR Narayan Swamy*

**Lucknow 1857.** *By Rosie Llewellyn-Jones ;(Harper Collins, May 2022);Pages: 172, Price: 399; ISBN- 9354894054.*

Dr Rosie Llewellyn-Jones, MBE, studied Urdu and Hindi at the School of Oriental and African Studies. Her PhD was subsequently published as 'A Fatal Friendship: The Nawabs, the British and the City of Lucknow' in 1985. She has also written the highly acclaimed 'The Last King of India'. 'Lucknow, 1857' is part of a new series of books on India's historic battles written by historian Rosie Llewellyn-Jones and the series editor of which is Squadron Leader Rana Chhina, the book examines the conflict in detail, from the British annexation of Awadh to the Indian response and the subsequent revolt by sepoys. The book is aimed at 'acquainting the reader with the rich tapestry of India's military history and to generate interest in the physical spaces linked with it'.

The book has a few distinct sections. One deals with the overall background of the mutiny. The other deals with the victors of Lucknow, Brigadier General Sir Henry Lawrence; 'the newly appointed Chief Commissioner of Awadh', Field Marshal Colin Campbell,' who recaptured the city; Brigadier General Sir Henry Havelock, who repeatedly attempted to reach the besieged Residency and finally succeeded; Major General Sir James Outram who recaptured the city and Brigadier William Hodson' who died during this and lies buried in La Martiniere School in Lucknow. The most important section of course is the account of the battles;

'Battle Sites': Chinhat, first and second reliefs, and the final recapture of Lucknow.

There is also a section which enumerates the events between June 1857 to March 1858 in a concise manner. The Indian commanders like Begum Hazrat Mahal, who became the chief figure of the resistance ' a divorced Queen with a teenage son Birjis Qadr who became the King ' Raja Nawabali Khan of Mahmudabad the maulvi Ahmadullah Shah also known as Danka Shah, Raja Jai Lal Singh ; occupy the space that's due to them in such an account. The last section contains brief descriptions of tourist places of historical importance in Lucknow.

On 30 June, under the overall command of Sir Henry Lawrence, the British forces had failed in a preliminary skirmish at Chinhat where Sir Henry Lawrence with six hundred soldiers were defeated and retreated into the residency at Lucknow, which immediately came under siege. Here, nearly 3,000 people ; British, Indian and Anglo-Indian – held out for four and a half months. The winter saw huge defensive barricades being built around Lucknow, but with their superior firepower, the British recapture was the inevitable outcome. This book deals with that siege and is written from the British point of view.

The uprising in Lucknow must be seen in the context of the annexation of the kingdom of Oudh by the Governor General, Lord Dalhousie, in 1856 and his ushering in 'radical and unpopular reforms'. He had been deposing rulers and attaching kingdoms including Punjab and 'wanted to add Awadh to his tally before he went'. Having covered this in the background and introduced the principal players on both sides, Llewellyn-Jones concludes Chapter 2 of Lucknow 1857 by providing detailed and valuable summary of the troops who were opposing each other during the various stages of the conflict. The 'Orders of Battle' provides an excellent breakdown of the manpower deployed by both sides in terms of cavalry, infantry, artillery, and gives out the numbers and types of guns, numbers of men, regiments and the names of commanders. The book is worth reading just for that.

Awadh had been ruled by Nawab Wazirs on behalf of the Mughals since 1720. When Burhan ul Malik realised that the Mughals were losing their grip on power it was one of the three provinces apart from Bengal and Hyderabad that became

independent of the Empire. His descendants ruled the area till December 1855 when Sir James Outram the British Resident offered the 'Last King' Wajid Ali Shah the 'unpalatable choice of voluntarily stepping down or having his kingdom forcibly annexed'. The King refused to step down and his kingdom was annexed on 07 February 1856 and he was exiled to Calcutta. Thirty thousand of his soldiers were discharged from service but allowed to keep their arms which they had brought when they signed up for the Army. These soldiers would form part of the fighting force against the Company a year later. They were to become rebels 'through no fault of their own'.

The other party who fought against the British were the taluqdars; the 'land holders of Awadh' who had lost much of their land and revenue due to the 'Summary land Settlement Act of 1856' and were now in debt as they could not meet the Company's demands'. When some of the largest land holding taluqdars such as Raja Jai Lal Singh, Raja Nawab Ali Khan of Mahmudabad, Raja Beni Madho Singh of Amethi and Loni Singh of Mithauli joined Begum Hazrat Mahal their private armies came with them. As per the author the 'uprising in Awadh was not an attempt to expel the East India Company from India.' She views it as a domestic affair to get the old regime back and cancel the outrageous revenue demands'. She feels it was restricted to the area in North India around Delhi as there was no uprising in the Deccan or Bengal.

However, on 01 May 1857 recruits of 7th Oudh Irregular Infantry at Mariaon Cantonment had refused cartridges and twenty of them were hung at Machi Bhawan. Subsequently, Mariaon Cantonment was set on fire on 30 May 1857 and members of the royal family were arrested. On 03 June units mutinied at Sitapur, 50 miles North of Lucknow and fourteen Europeans were killed.

After the recapture of Lucknow Begum Hazrat Mahal fled to Nepal with her son where Jang Bahadur her former opponent reluctantly gave her shelter, his reluctance being eased by the jewels they carried and she is buried there while Birjis Qadr returned in 1887 and was poisoned by jealous relatives.

The author refers to the events as the Indian Mutiny, which is how the British called it, though they also use the term 'Sepoy Rebellion' whereas it is referred to as the First War of Independence by most Indian writers while a neutral term could be The Great

Uprising of 1857. Of course there are also those who refer to it as the 'Revolt of 1857'.

The questions remains is whether in May 1857 they wanted to achieve a symbolic and psychological victory by frightening the British who had ruled Awadh and were now confined to thirty three acres in the Residency to surrender or should the rebels have killed those confined to the residency as was done in Kanpur.

The city of Lucknow is covered in great detail. One is given a glimpse of the splendour of the buildings to include the palaces of Qadam - Rasool which housed a 'footprint of the Prophet' and had been 'converted into a powder magazine by the British', Chatter Manzil and Qaiserbagh which featured prominently during this period. Most of the fighting took place around Hazratganj, the Residency at the end of Hazratganj and Machhi Bhawan. The Gomti River and Haider canal with the Charbagh Bridge figure prominently. There are of course historic illustrations and photographs by Felice Beato and photographs by Anil Mehrotra. Incidentally. The fighting here took place in urban spaces, along residential streets, in religious buildings in palace gardens and schools on a bridge in houses and sometimes from room to room.

The book of course is a condensed version of the events giving out most details and is more like a 'battlefield tourist guide' to generate interest for the traveller who has an interest in history. The authors' brief was to condense the relevant history into 30,000 words. What is remarkable is how much detailed narrative and practical information has been successfully incorporated in the book while achieving this goal.

There is no denying the fact that this marked an important milestone in the history of India and resulted in the British government taking over from the 'East India Company' ushering in colonisation and 'British Raj'.

This richly illustrated book draws on Llewellyn-Jones's intimate knowledge of Lucknow. There is no denying that it is a scholarly narrative of a part of our history. While academic rigour has been applied the tone of the narrative is intended to appeal to the lay reader who wishes to visit Lucknow and intend 'to walk the ground', as well meeting the requirements of the discerning academician and historian .

*Maj Gen Jagatbir Singh, VSM ( Retd)*

**Arms and the Woman: The Shattered Glass Ceiling.** *By Maj Gen VK Shrivastava, VSM ; (Vij Books India Pvt Ltd, Delhi, October 2022); Page;115, Price ; Rs.950/- ISBN: 9393499330.*

The 21<sup>st</sup> century is decidedly automated. Science, Politics, Literature, Public discourse, Entertainment, Sports and Professional spheres have seen some remarkable changes in terms of innovation, communication, acceptance of diverse cultural & social practices, and leadership roles. A significant part of these changes is the rate with which women are partaking an active role in all these spheres. The lens with which a woman had been hitherto looked upon is breaking, thanks to the weight of uncountable achievements those women all across the regions are conquering. The author dives deep into the professional domain of military to unearth the historical and current account of women participation over the years. By prolifically writing about the conformist gender roles that women were subjected to, to literally shattering the ceilings and becoming number one in their respective fields. The book is a must read especially for all young girls who dream of serving the nation at par with their fellow comrades.

The book begins by dissecting the evolution of women in arms and takes the reader through the prehistoric times, when early humans hunted for survival. The author clearly negates the myth that women were endowed only with the child bearing capacity or they were restricted to nurture the social group which they belong to. Rather he cites the findings from various archeological sources to establish that inspite of biological differences; there was “equality of labor” amongst the nomadic people. The excavations have now revealed that woman were hunters too.

The author gives an interesting take with regard to the status of women during the Vedic period in context of India, and mentions the excerpts of the Vedas which had a significant contribution from female scholars like, Maitreyi and Gargi. Women also had the freedom to choose their own husband (Swayamwar), Widow Remarriage also existed as an alternative. Apart from this women also took full charge of financial decisions pertaining to household activities. It also differentiated the position of women in comparison to western civilisations, distinctly the Indian society during the ancient period harbored much greater respect, freedom and equality towards women. It is true that every civilisation brought

with itself certain norms and practices that are still being accepted and preserved for, as a mark of deep respect to their ancestors and the larger idea of their existence, some may occur to be bizarre and discriminatory towards a certain gender to an outsider but may hold regard for some or is still being perpetuated for self-interests, take for example the practice of “Female Genital Mutilation” that exists even today.

In the subsequent chapters, the book gives insight into a women’s profile as a soldier on and off the battlefield as a nurse/communication operators/part of the auxiliary arms and finally in the combat role. It is disheartening to see the impediment women candidates had to go through to prove their worth. Despite that it will make the reader especially young girls proud and optimistic about the fact that grit and determination will always pay. Although many western countries now, have accepted females in combat roles; Israel in particular stands out as it allowed females in the conscription system by underscoring that they should also have “equal right” and also “contribute” in a similar way that men do, till now almost 500 female soldiers have laid down their lives in defending the honor of their state. As for India the women till 1950s were only restricted to the role of Medics, it was only in 1992 that women were granted “Short Service Commission” in Administrative and Logistics capacity. However, women officers battled the entire shortcoming their way and excelled in their capacities. Flt Lt Gunjan Saxena flew operational sorties during the Kargil War, Shivangi Singh has become India’s first woman pilot to fly Rafale fighter jet, Capt Tanya Shergill the first Parade Adjutant to lead an all-man contingent in the Republic Day Parade are some of the accomplishments at their way. Female officers had to challenge the union legally at many instances whether it was about being given permanent commission or quashing unreal fitness standards these women stood their ground, as a result NDA, RIMC are now welcoming their first batch of female candidates. The inherent challenges of a male dominated field remains deeply entrenched and also gives the reader a food for a thought about the debate of making these female candidates accepted for what they are. The author in addition to the unbiased reporting of the constraints; sets the record straight that although military remains a professional force it cannot be the realm to contest debates on the emancipatory issues, it first and last objective remains the security of the nation alone.

The book concludes on a positive note; author pens down a heartfelt message that rings consonance with the underlying theme of the book. There is a lot that has been done and there will be times when women will be doing a lot more setting the bar high time and again, the word has spread and the tides will rule in favour of the worthy regardless of the gender.

*Ms Surbhi Chakraborty*

***The Pashtuns : A Contested History.*** By Tilak Devasher; (Harper Collins, India, Sept 2022); Pages: 304; Price: Rs.519; ISBN-9394407634.

The Pashtuns are perhaps the largest ethnic group in the world without a country of their own. They inhabit a continuous stretch of land from the Hindu Kush to the Indus, across Pakistan and Afghanistan. Pakistan used the Pashtun-dominated areas in Federally Administered Tribal Areas (FATA) as a launching pad against the Soviet occupation of Afghanistan in the 1980s and later during the US-led War on Terror. In the process FATA was kept in a constitutional and informational black hole. The discontent finally burst in 2018 when the extra-judicial killing of a Pashtun youth led to widespread protests.

Through his book, the author attempts to expand the geopolitical understanding of South Asia, particularly about the Pashtuns. Using his expertise in security and strategic studies, Devasher explores the shifting power structures in Afghanistan after the US' withdrawal last year.

The book (The Pashtuns: A Contested History) looks upon the Pashtuns inhabiting a single piece of real estate though divided into two countries – Afghanistan and Pakistan – by the artificial Durand Line. Their commonality of descent, religion, language, historical memories, cultural and familial bonds and a common code, Pashtunwali (the way of the Pashtun), makes it easy to do so. The 500-page-long book examines the region inhabited by the Pashtuns, the rise of the Taliban and al-Qaeda in the region. The Pashtuns inhabit lands across borders and countries. From the Hindu Kush to the Indus, the community straddles Pakistan and Afghanistan.

The book details how, in the 1980s, Pakistan used the Pashtun-dominated regions in the Federally Administered Tribal

Areas (FATA) as launching pads against the Soviet occupation of Afghanistan and also during the US-led 'War on Terror' years later.

The book's rich narrative includes the *origin* of the Pashtuns, the initial contours of the Pashtun empire which stretched from the Indus River to the Hindu Kush range, the first empire set up by Ahmad Shah Durrani in 1747, the subsequent breakup of the Pashtun land and its inclusion into Maharaja Ranjit Singh's Sikh empire, the British takeover, and finally the newly created state where "Pakistan inherited the British portion of Pashtunistan in 1947." Devasher explains *Pashtunwali* as "the defining tribal code that distinguishes Pashtuns from other ethnic groups", the relationship of Pashtunwali with Islam and the influence of Sufism and Barelvi practices on Pashtuns. He discusses the contested Durand Line of 1893 and the subsequent demand for Pashtunistan, and brings the reader to the current day, drawing from the historical and cultural linkages between Pashtuns in Afghanistan and Pakistan, to Islamabad's insecurities with Pashtun nationalism, Pakistan's dubious role in dividing the Pashtuns and the rise and resurgence of the Taliban.

The author also talks about the US withdrawal in Afghanistan; sophistication with which the entire plan was carried by the Taliban, who through their extensive propaganda machinery that specifically targeted to attain the sympathy and consideration of not only the west but the entire Muslim brethren. The cherry on the cake being Sirajuddin Haqqani's article that got published in The New York Times; where he brazenly spun a cocoon of lies about the role he wants the west to play in the reconstruction of Afghanistan that will include each and every citizen, where no one would be deliberately left out. The talk of women's right & education was part of the paraphernalia too; where as the author asserts through reports that the track record of the Taliban rule laid bare open in a Report published by Human Right's Watch about the blatant violation of the Human rights in the province dominated by the Taliban. Author also poses some valid challenges ahead not only for the Taliban ruling the state but international ramifications too in the form of; Firstly, the rising challenge to eradicate economic and social situation of the Afghans, even for a basic service it would nearly require \$8.5 Billion per year for sustaining the

activities. UNICEF and World Food Programme have given devastated figures in term of unavailability of food and a large percentage of malnourished children and families. Second challenge emanates from the constitution of tribal leadership, to simply put which group consolidates more power, Thirdly consonance between the Political and on ground leadership of the Taliban, Fourth “Terrorism” that stems in the philosophy of the ruling entity and its impact in Asia, specifically central Asia and concerns of an enhanced network based operations with inclusion of ex members of Afghanistan’s intelligence services and lastly the dream to be recognized officially by the global bodies and especially the UNSC that is determined to thrash the acceptance of a formal state if conditions are not fulfilled by the ruling entity.

The book is packed with relevant questions and offers an insight into the mind of these rulers who wish to morally bind the society at the cost of an unprecedented humanitarian crisis at the cusp of total breakdown.

*Dr Jyoti Yadav*

## **RESULT OF ESSAY COMPETITIONS 2022**

### **USI GOLD MEDAL ESSAY COMPETITION 2022**

**Subject: ‘Grooming of Military Officers for Joint Services Environment’**

First	06480-A Cdr M Arun Chakravarthy Naval Wing DSSC, Wellington The Nilgiris-643231 Tamil Nadu Email: arun.chakravarthy05@gmail.com Mob: 8806945500	Gold Medal, Cash Award of Rs. 15,000/- and entry accepted for publication.
Second	06817T Lt Cdr Anmol Pathak Locker Number- 653 C/o Navy Wing, DSSC, Wellington, Tamil Nadu-643 231 Email : anmol.pathak@navy.gov.in Mob: 9885948489	Cash Award of 10,000/- & entry accepted for publication.

**LIEUTENANT GENERAL SL MENEZES MEMORIAL  
ESSAY COMPETITION**

**Subject: 'Appraisal of Gen Zorawar Singh's Military Expedition and its Impact on India's Strategic Geography'**

First	Col K Ravichandran CI Tac, College of Military Engineering, Dapodi, Pune, Pin- 411031 Email : ravishery@gmail.com	Cash Award of Rs 10,000/-, Certificate and entry accepted for publication
Second	Personal Number –IC- 60641W Col Devendra Kumar Faculty of Military Leadership (FACMIL) Army War College Pin- 908767 C/o 56 APO Email : dev_1979@hotmail.com	Certificate

**USI-WAR WOUNDED FOUNDATION JOINT ESSAY  
COMPETITION**

**Subject: 'The State of War Wounded Personnel in India – An Appraisal'**

First	Personal No:- 06805-R Lt Cdr Arun Kumar Yadav Locker No 654 C/o Navy Wing DSSC, Wellington Tamil Nadu- 643231 Email : akylarun314@gmail.com Mobile: 9652921903	Cash Award of Rs 15,000/- , Certificate and entry accepted for publication
Second	Personal Number –06568-A Cdr Tejinder Pal Singh Locker No 637 C/o Navy Wing DSSC, Wellington Tamil Nadu- 643231 Email : tejinder_87@yahoo.co.in Mobile : 7428240376	Cash Award of Rs 10,000/- and Certificate

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# USI

(Estd. 1870)

## 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

The Erstwhile Centre for Research and its resources have been merged into the new Centre named as USI Centre for Strategic Studies and Simulation (USI-CS3) wef 01 January 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 till Aug 2014, when it moved out of USI premises and was delinked from USI. Its aims were organising workshops, seminars and training capsules for peacekeepers, observers and staff officers – both

Indian and foreign. It also oversaw the practical training of Indian contingents. It functioned under a Board of Management headed by the Vice Chief of the Army Staff and worked in close coordination with the Service Headquarters and the Ministries of External Affairs and Defence. In August 2014, CUNPK moved out to the accommodation allotted by the Army HQ.

### Centre for Military History and Conflict Studies (CMHCS)

The USI-Centre for Military History and Conflict Studies (USI-CMHCS) was established in December 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.

### 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 MoU 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 Armed Forces of India.

### 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.

## MEMBERSHIP

The following are eligible to become members of the Institution :

- Officers of the Armed Forces
- Class I Gazetted Officers of Group 'A' Central Services.
- Any category mentioned above will be eligible even though retired or released from the Service.
- Cadets from the NDA and Cadets from the Service Academies and Midshipmen.

For further particulars, please write to Director, 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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