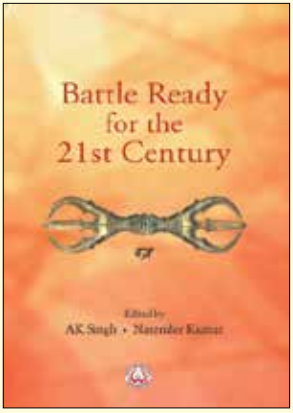
CLAWS JOURNAL

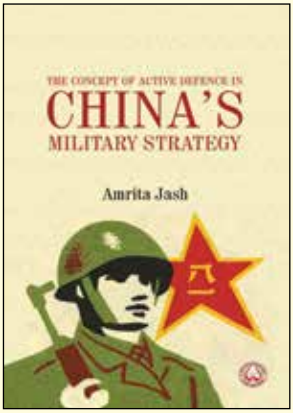
SUMMER 2021 VOL. 14, NO. 1 ISSN 2319-5177

CENTRE FOR LAND WARFARE STUDIES

NEW BOOKS

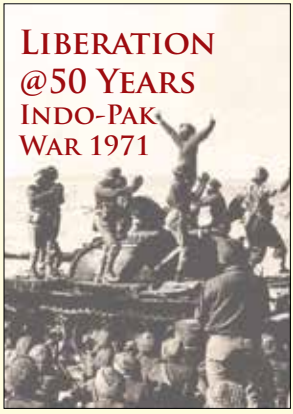


Battle Ready for the
21st Century
AK Singh and Narender Kumar (Eds.)
₹ 995



The Concept of Active
Defence in China's Military
Strategy
Amrita Jash
₹ 995

FORTHCOMING BOOK



CLAWS JOURNAL

Journal of the
Centre for Land Warfare Studies

Distributed by:

KNOWLEDGE WORLD
KW Publishers Pvt Ltd
New Delhi

CLAWS Journal

CENTRE FOR LAND WARFARE STUDIES

New Delhi

CLAWS Journal is published by the Centre for Land Warfare Studies (CLAWS), New Delhi. CLAWS is an independent Think Tank dealing with national security and conceptual aspects of land warfare, including conventional & sub-conventional conflict and terrorism. CLAWS conducts research that is futuristic in outlook and policy oriented in approach.

For submission of articles, commentaries, review articles and book reviews, please see "Notes for Contributors" given at the end of the Journal.

Subscription Rates

India:	Rs 500/- (Single Issue), Rs 1000/- (Two Issues)
SAARC Countries:	US$ 15 (Single Issue)
All Other Countries:	US$ 20 (Single Issue)

CLAWS Vision: To establish CLAWS as a leading Think Tank in policy formulation on Land Warfare, National Security and Strategic Issues.

Mailing address

Managing Editor, CLAWS Journal
Centre for Land Warfare Studies
RPSO Complex, Parade Road
New Delhi 110010, India.
Tele: +91-11-25691308, Fax: +91-11-25692347, Army: 33098
Email: clawsjournal@gmail.com / claws.publications@gmail.com
Website: http://www.claws.in

Distributed by:
Kalpana Shukla
KW Publishers Pvt Ltd
4676/21, First Floor, Ansari Road
Daryaganj, New Delhi, 110002
Email: kw@kwpub.in
Website: www.kwpub.in

Digitally Hosted by:
IndraStra Global e-Journal Hosting Services

IndraStra Global
162 W, 72nd Street
New York-10023
USA

ISSN 2319 – 5177

Website:
https://ojs.indrastra.com/index.php/clawsjournal

Contents

Note from the Editor

With 2021 marking the commencement of the third decade of the 21st century, the world has been in a state of flux defined by the rapidly changing security environment. With the envelope of geopolitical and geostrategic challenges continuously expanding in form and magnitude, it has broadened the context of national security. The changes in the geopolitical and the geostrategic contexts have also transformed the understanding of warfare. The nature, character and form of warfare and war are constantly evolving. In this process, the use of 'technology' has been an integral factor in changing the nature of conduct of warfarethus, further expanding the nature as well as the scope of the unwarranted risks.

This necessitates the operating environment of warfighting to be perceived differently from the old paradigm. The emerging threats for the world at large and India in particular should be assessed based on: greater complexities of the high-tech battlefield; increasing role of non-traditional security threats in the form of non-state actors as well as environmental and health hazards; use of asymmetric, hybrid, and grey zone tactics by adversaries and others—that are shifting the domains of warfare in the operational environment. Given this context, in assessing the implications of the changing global security environment on India's national security combined with the looming effects of the pandemic and the border tensions with China, the Summer Issue puts together ten original contributions in the form of articles, commentaries and book reviews by a wide range of authors.

The articles mainly assess the changing nature of India's national security paradigm from the vantage of global, regional and internal security threat perspectives and offer insights on what needs to be done to safeguard India's national interests—both regionally and globally.

The CLAWS Journal Summer Issue makes a comprehensive read and provides significant insights on the emerging debates on national and international security.

Wish you a happy and interesting reading!

Editor-in-Chief

CENTRE FOR LAND WARFARE STUDIES (CLAWS)

RPSO Complex, Parade Road, Delhi Cantt, New Delhi-110010
Tel: 9311950042, Fax: 91-11-25692347
Email: landwarfare@gmail.com, director.claws@gmail.com,
Web: http://www.claws.in

Membership Details

The Centre for Land Warfare Studies (CLAWS), New Delhi is an Independent think-tank dealing with national security and conceptual aspects of land warfare, including conventional, sub-conventional conflict and terrorism. CLAWS conducts research that is futuristic in outlook and policy oriented in approach.

The vision of the CLAWS is to develop a 'strategic culture' to bring about synergy in decision making both at national and operational levels. Since its inception, CLAWS has established itself as one of the leading 'think tanks' in the country. To achieve its vision, CLAWS conducts seminars (at Delhi and with commands), round table discussions and meetings with academia and intellectuals of strategic community both from India and abroad. CLAWS also comes out with a number of publications pertaining to national and regional security and various issues of land warfare.

Members are invited to all CLAWS seminars/round table discussions (details regarding impending events are communicated to all members through e–mail. Information also available on our website, http://www.claws.in). For the benefit of members, who cannot attend various events, reports are forwarded through e-mail. Members are sent copies of the bi-annual CLAWS Journal & Scholar Warrior, occasional (Manekshaw) Papers and given membership of the CLAWS Library. From 01 January 2020, certain occasional papers would be made available to the members digitally only.

Eligibility:

Individual Membership

- Life Membership: All serving and retired officers of the Indian Army. (Discount: 20% for YOs – First year of service)
- Annual Membership: All serving and retired officers of the Indian Army.

Institutional Membership

Corporate / Institutional Membership

- All formations, units and establishments of the Indian Army.
- Representatives nominated by name accepted by the BoG/Trustees by any organization, institution, or diplomatic mission based in India.

Associate Membership

- Vice Chancellor of University and Heads of Departments of Defence Studies, military correspondents of Indian Newspapers, magazine and news agencies distinguished persons associated with the fields. Research fellows and media persons may be granted membership as approved by the BoG/Trustees from time to time.

All members can also order CLAWS sponsored/commissioned books at special discount of 25% from the cover price.

To
The Director
Centre for Land Warfare Studies (CLAWS)
RPSO Complex, Parade Road
Delhi Cantt, New Delhi –110010

Passport Size Photograph for Individual Member

APPLICATION FOR INDIVIDUAL MEMBERSHIP

Please tick any one:-
☐ **Individual Life Rs 8,000/-**
☐ **Individual Annual Rs 1,500/-**

Sir,
I would like to apply for Membership of the Centre for Land Warfare Studies. I understand that my membership is subject to the approval of the Director. If approved, I will respect and follow the rules and regulations of the CLAWS (as amended from time to time).

Name of Individual (Service No) .....
Address: .....
.....
.....
Parent Arm/Service .....
Date of Birth .....Phone/Mobile: .....
Fax: .....Email:.....

Dated …….. **(Signature of Applicant)**
(_____)

(COUNTERSIGNED)
(For Serving Officer)

Mode of Payment

1. A Demand Draft/multi-city cheque No……dt…… of …… Bank for Rs **…….**in favour of **CLAWS payable at Delhi Cantt** is enclosed herewith.

OR

2. **NEFT:** Bank of Name – Syndicate Bank, 22 Thimmayya Marg, Delhi Cantonment, New Delhi 110010, Saving Account No – 91162010005981, IFS Code – SYNB0009008.

Note:

1. Please enclose one additional passport size photograph for membership card
2. Veteran Officer to enclose a copy of the veteran I Card.
3. The application form can also be forwarded through email at clawslibrary@yahoo.com).

FOR OFFICE USE ONLY

Multi-city Cheque/DD Details:.....
Membership No.: .....Date of Issue of Membership Card:.....
Remarks of Deputy Director: .....
Remarks of Director:.....

The Design in China's Actions and Behaviour: An Assessment

V. K. Ahluwalia

Abstract

On its foundation in 1949, securing its strategic periphery and annexation of Tibet and Xinjiang was one of the primary goals of the People's Republic of China (PRC). With the multiple aims of achieving economic, strategic, and political dominance, China has further enhanced its connectivity with Asia, Africa and Eurasia by its Belt and Road initiative (BRI). Considering the rapidly changing geopolitics and economic challenges, the Chinese, as part of their long-term designs, have whipped up 'nationalism' by multiple means. The military interventions, assertiveness and expansionism to have been based on a design to serve its national interests—especially the economic, political, and strategic ones. The boundary dispute between India and China continues to remain unresolved, due to certain designs of the PRC. It is important to analyse the strategic significance of Eastern Ladakh, especially when additional security personnel have been inducted into Gilgit Baltistan region by China as part of the China Pakistan Economic Corridor (CPEC). Despite the border management mechanisms and confidence-building measures (CBMs) in place, and the periodic engagements at different levels, the PLA surprised the Indians by contacting and/or transgressing across the Line of Actual Control (LAC) on a wide front in Eastern Ladakh in May 2020. Thus, China's designs call for India to improve its preparedness, and review its policy, to pursue its goals and maintain peace and stability in the region.

Lieutenant General (Dr.) **V. K. Ahluwalia** (Retd) is Director, Centre for Land Warfare Studies, New Delhi.

Introduction

> *"A military is built to fight. Our military must regard combat capability as the criterion to meet in all its work and focus on how to win when it is called on."*
>
> —Xi Jinping, 2017[1]

> *"The era of expansionism is over; this is the era of development. It is this mindset of expansionism that did great harm. [...] India's commitment to peace should not be seen as India's weakness."*
>
> —Narendra Modi, 2020[2]

The defining trend of the 21st century, undisputedly, has been the rise of the People's Republic of China with sustained economic growth for over three decades. According to the UK-based Centre for Economics and Business Research (CEBR), released on 27 December 2020, China is expected to be the largest economy by 2028, five years earlier than the previous forecast, and that India is expected to be the third-largest economy by 2030.[3] In addition, over the years, China has progressively transformed into a strong military power, with a vibrant defence industrial base which focuses on technology, innovation, autonomous systems, artificial intelligence (AI) and disruptive technology-enabled systems. In the future, it also aims to be the leader in other domains such as cyber, information, and space. Concurrently, it would be prudent to analyse the impact of China's new concept of Military-Civil Fusion (MCF), which states that the 'PRC pursues its development strategy to "fuse" its economic and social development strategies with its security strategies to build an integrated national strategic system and capabilities in support of China's national rejuvenation goals.[4]

With the multiple aims of achieving economic, strategic, and political dominance, China has further enhanced its connectivity with Asia, Africa and Eurasia by its BRI, covering about 120 countries and 60 per cent of

the world's population. It is well known that China, with its economic strength and military muscle, plans to dominate the Western Pacific Ocean and expand into the Indian Ocean. What is worrisome is that with the ongoing pandemic and the growing instability worldwide, it has been assertive and expansionist in its designs, laying illegal claims to territories both on the continental and maritime domains. Is it in conformity with Sun Tzu's dictum, *'In the midst of chaos, there is also an opportunity?'*

Given the geopolitical considerations of the Indian subcontinent, it was stressed that "[….] India is the heart of Asia, and that the Indian Ocean is India's Ocean, it treated the South Asian subcontinent as its sphere of influence […]".[5] As China realised India's geo-strategic location in Asia, South Asia and the Indian Ocean Region, its historical, cultural and religious linkages, and its potential, and capability to be a prominent regional cum global power, it has taken initiatives, by design, to balance India's growing power by developing relationship with India's immediate neighbours on the subcontinent, with an 'all-weather friendship' with Pakistan. As part of its long-term vision, it has indulged in 'strategic encirclement' of India by establishing footholds and developing infrastructure in Myanmar, Bangladesh, Sri Lanka, Pakistan, Maldives, and others. While all this has been possible due to its long-term planning and implementation, it certainly adds to India's security concerns.

The paper aims to briefly analyse the early years of the PRC and its designs to gain strategic advantage by securing its strategic periphery, and the rationale for military interventions at different stages. Besides analysing the build-up and stand-off in Eastern Ladakh, it also examines the India-China boundary dispute, the strategic significance of the Western Sector (Ladakh) in particular, as it experiences maximum incidents along the undemarcated border—the Line of Actual Control. It also attempts to answer the reason as to why China, by design, has not shown any interest to resolve the boundary dispute, and also provide an assessment of India's actions in the future.

Tibet and Xinjiang: The Design

Clausewitz has maintained that "… the only source of war is politics the intercourse of governments and peoples".[6] In other words, that war is pursuance of political objectives, with all available means. Therefore, generally, 'Military Campaigns' are not planned on a standalone mode. They are intertwined with a suitable combination of political, economic, strategic, and military agendas.

On 1 October 1949, Mao Zedong is known to have stood at ramparts of the Tiananmen gate to announce the formation of the PRC; and on 31 December, the same year India recognised PRC[7]—being the second non-Communist country to do so. Within three months of formation of the PRC, on 1 January 1950, the new Chinese government announced that the 'liberation' of Tibet would be one of the principal goals of the People's Liberation Army (PLA).[8] Sure enough, the Chinese mobilised its 18th Army to move into Tibet on 21 January 1950. By the later part of 1950, they moved from four provinces of China to converge at Lhasa; the PLA defeated the Tibetan Army on 19 October 1950, and the Tibetan leaders signed the "Seventeen Point Agreement" in Beijing in 1951.[9] It professed to guarantee Tibetan autonomy, and to respect the Buddhist religion, but also allowed the establishment of Chinese civil and military headquarters at Lhasa.[10] As Alfred Rubin affirmed that "China clearly emerged as *de jure* sovereign over the territory of Tibet".[11] Thus, after signing of the Agreement on 23 May 1951, Tibet was annexed and was under the control of the PRC.

This context then leads to the understanding of China's annexation of Xinjiang. Much before the foundation of PRC and annexation of Tibet, the Chinese leaders had moved their forces in August 1949 against the nationalist forces, which were about 70,000 in strength, to control and annex the Xinjiang province. By the spring of 1950, Xinjiang was annexed and was under the control of the PRC.

These two cases in point make it imperative to ask: What was the Chinese perception in the 1940-50s on securing control over Tibet and

Xinjiang? To note, Mao declared Tibet to be the palm of China; whereas Ladakh, Nepal, Sikkim, Bhutan, and North East Frontier Association (NEFA, now Indian province of Arunachal Pradesh) as the five fingers, and it is China's responsibility to 'liberate' them all.[12] Besides having an eye on the rich natural resources of these regions, the Chinese leaders were certainly looking forward to securing their borders with Soviet Russia and the southern border along the Great Himalayan Mountain Range. Simultaneously, the Chinese also wanted to keep their trade routes open with Central Asia and Eurasia. Today, 72 years later, both these regions provide China with the strategic advantage and connectivity with Eurasia, South Asia (Pakistan in particular), and West Asia by its long-term vision of BRI and one of its offshoots—the CPEC. Wherein, the latter provides access to the warm waters of the Indian Ocean. Thereby, as one can construe and as hindsight suggests, China due to its long-term vision, had achieved both its aims of securing its borders and trade interests in 1949 itself.

Securing Strategic Periphery

In 2000, Michael Swaine and Ashely Tellis emphatically suggested that, as per historical records the:

> "Chinese State has employed force against foreigners primarily to influence, control, or pacify its strategic periphery and generally has done so when it possessed relative superiority over its potential adversaries on the periphery".[13]

What calls for such an impression of Chinese extraordinary concern about its periphery? There are two plausible reasons for it, that is: First, the ancient Chinese had always believed that China was the oldest civilisation—the centre of all civilisations, and that it was the centre of the earth—the "Middle Kingdom". It also believed that all activities

revolved around China—be it economic, cultural, historical, production, innovation, research, and development. Therefore, to retain its lost supremacy, ensure economic growth and social change, it was prudent to ensure that the Chinese periphery was always secured. Second, the impact of the 20th century, which Chinese perceive as the "Century of Humiliation", a period of intervention and subjugation of the Chinese Empire and the Republic of China by Western powers, Russia, and Japan between 1839 and 1949.[14] It all began with the First Opium War (1839-42) that resulted in the signing of the Treaty of Nanking (1842), and Hong Kong being ceded to the British.

China and its Century of Humiliation: Whipped up Nationalism

With the end of the Cold War, the world saw a decline in Communism in Russia and Yugoslavia, but China saw this as an opportunity to shift its focus from 'Communism to Nationalism'. The Chinese have whipped up 'nationalism' as they initiated the idea of "[…] humiliation an integral part of the construction of Chinese nationalism".[15] As William Callahan specifically notes "… there are textbooks, novels, museums, songs, and parks devoted to commemorating national humiliation in China. […] From 1927 to 1940, in Republican China, there was an official holiday called National Humiliation Day".[16] These thoughts, when put together in the current environment, are also suggestive of the Chinese vision to foresee the problems likely to be faced by the country due to domestic and international pressures: the slowing economy, post-global economic downturn of 2008 and its impact on unemployment; internal security situation; global pressures on account of assertiveness and expansionists designs and so on. Owing to these issues, the Chinese government has initiated measures to whip up the nationalist sentiments to rejuvenate China.

In November 2012, Xi Jinping became the General Secretary of the Communist Party of China (CPC) and announced a new goal: '*qiang*

zhongguo meng—strong nation's dream'. It was the Chinese Dream to be at the centre of the earth, through multiple means. President Xi Jinping is committed to achieving 'the great rejuvenation of China by 2049'—a hundred years after the PRC was formed on 1 October 1949. In this light, with an aim to undo the 'Century of Humiliation', China aims to restore its rightful place by 2049, or even earlier, by economic, military, political and strategic dominance. Xi's dream has been to have a stronger nation with a strong military. Based on the envisaged threats and challenges, Xi had launched military reforms in 2015—with an ambition to achieve mechanisation and informatisation by 2020; military modernisation by 2035;[17] and a world-class military by 2049. Simultaneously, China established five Theatre Commands (TCs) by February 2016, by amalgamating the erstwhile seven Military Regions (MRs). To further have tight control over the restive regions of Tibet and Xinjiang, Xi integrated Tibetan and Xinjiang military commands under the Western Theatre Command. China's paramilitary force, and the People's Armed Police (PAP) which were previously under the dual civilian and military command, have been placed firmly under China's Central Military Commission (CMC), de facto under the Chairman Xi Jinping. Furthermore, China's Coast Guard, which was previously a civilian agency, has been placed within the PAP, and is thus, now a part of the military command structure.[18]

Military Interventions and Designs

At the global level, China has intervened militarily in various regions and places since 1949, a few of which are discussed briefly, which are as follows:

- *Korean Campaign (1950):* After a long spell of the civil war and subsequent formation of the PRC on 1 October 1949, the CPC and the PRC were in the process of consolidating and stabilising themselves. The Korean War (1950-1953) began when the North Korean Communist

Army crossed the 38th Parallel and invaded the non-Communist South Korea. The United States intervened to help South Korea. General Douglas MacArthur, who had commanded the Southwest Pacific in World War II (1939-1945), was in command of the US forces to hold off the North Koreans at Pusan perimeter, at the southernmost tip of Korea. After the famous amphibious assault on Inchon; Seoul, the capital of South Korea, was recaptured, and the US and UN forces crossed the 38th Parallel and the Yalu river.[19] According to Akshat Upadhyay, the Chinese had set Yalu River as the boundary for the UN forces, the crossing of which brought the Chinese to intervene.[20] The US and UN forces were surprised to find that the Chinese had secretly moved in 300,000 volunteer force, predominantly ethnic Korean PLA veterans, primarily to address their own security concerns. Although China was militarily weak and was itself in the process of stabilising itself, it intervened militarily with a design to secure its borders in the northeast. However, in doing so, it perhaps lost an opportunity to pursue its own 'One China policy' with Taiwan.

- *India-China War (1962):* It is generally believed that Chairman Mao Zedong had decided to launch an offensive against India on 20 October 1962, on both the eastern (North-East Frontier Agency-NEFA) and western (Eastern Ladakh) sectors simultaneously. A few would argue that his larger aim was to 'teach India a lesson'. It is not entirely true. Demographic evidence indicates that during 1958-62, an estimated 30 million people died of starvation in China, due to Mao Zedong's programme 'Great Leap Forward'. The deaths were more than any other single famine in recorded human history.[21] Adding to it, in the spring of 1962, China faced renewed ethnic unrest in the frontiers, especially Xinjiang, during the economic crisis following the failure of the Great Leap Forward.[22]

  Therefore, more than the reasons for the alleged forward posture by the Indian Army in 1961, one of the main reasons for China's

attack on India was to divert people's attention from its internal conditions and low popularity of Mao Zedong in the late 1950s.[23] Having launched a major weight of his offensive on the eastern sector (NEFA), and achieved success, the Chinese withdrew to their side of the McMahon line in NEFA (now Arunachal Pradesh), on their own on 22 November 1962. However, they did not withdraw from the Western Sector (Ladakh region). The Chinese had apparently advanced up to their '1960 Claim Line',[24] from which they did not withdraw. Did it really mean that the Chinese had no claim on NEFA, as they withdrew without any pre-conditions? Or, was it primarily on account of its inability to sustain itself logistically, having stretched themselves on extremely difficult terrain?[25] It is to note that China in fact does not have any claim on any territory in Arunachal Pradesh. However, in hindsight, the success in the said war gave the Chinese political, territorial, strategic, and military advantages.

- *Sino-Soviet Border Conflict (1969):* It was a seven-month undeclared military conflict between the Soviet Union and China in 1969. On the border of China with the Soviet Union, the primary areas of conflict were the two islands of Qiliqin and Zhenbao on the Wusuli (Ussuri) river, and a part of Bolshoy Ussuriyski Island. As noted, in early March 1969, the Soviets and the Chinese troops were engaged in a conflict,[26] and that the main aim of Mao Zedong was to trigger a massive internal mobilisation of his country's resources, population and patriotic sentiments, which had been fractured completely in the aftermath of the Cultural Revolution. According to the US Annual Congress Report of 2020, China's contested border with the Soviet Union during the 1960s raised the possibility of a nuclear war.[27] With the 1991 Sino-Soviet Border agreement, both sides resolved most of the border dispute between the two countries.
- *Vietnam (1979):* China intervened with a design to support the Khmer Rouge. It had political, strategic objectives, as also to look

after the ethnic Chinese minorities in Vietnam. In the end, China did not really succeed in dissuading Vietnam from its involvement in Cambodia, as the Vietnamese troops remained in Cambodia till as late as 1989.

- *Taiwan Strait Crisis (1995-96):* China has never agreed to compromise over the sovereignty of Taiwan. It has provocatively demonstrated its military muscle on several occasions to integrate and unify the island with the mainland. On 23 March 1996, Taiwan was set to vote for the presidential elections, with the focus on the democratic process. The PRC conducted a series of military exercises and missile tests in and around the Taiwan Strait from 21 July 1995 to 23 March 1996, to send a message to the Taiwanese electorate that voting for presidential elections would mean war.[28] Going by the fact that the PRC conducted a near similar type of activation of the Taiwan Strait in 2020, it reinforces its design that even the 1995-96 crisis in Taiwan Strait was primarily to coerce and intimidate Taiwanese with their 'One China Policy'. This area remains a flashpoint, which could trigger a conflict in the future.

Assertive and Expansionist Designs

Over the last three decades, and the last decade, in particular, China has grown in power and strength. The PRC has built its Comprehensive National Power (CNP), which is evident from its sustained economic growth, military strength, technology-enabled systems, ISR capabilities, information warfare, outer space and cyber capabilities. With all these, China, during the last decade, has been far more assertive and expansionist. As primarily evident from China moving into the South China Sea (SCS) for exploration of oil, but, as part of the long-term plan, it created artificial islands and built field fortifications in the SCS. As China's nine-dash line claim is central to the territorial dispute in the resource-rich waters of the SCS, China has used grey zone aggressive tactics against other claimant

countries such as Vietnam and the Philippines, by employing the maritime militia, and survey vessels to lay claims. Most recently, the foreign affairs department of the Philippines accused China of "belligerent actions" against their boats near the Scarborough Shoal.[29]

Apart from this, the PRC also declared Air Defence Identification Zone (ADIZ) in the East China Sea with effect from 23 November 2013. Such a unilateral declaration by China drew reactions from Japan, South Korea, Taiwan, and the US. It has been argued that the creation of the new ADIZ can be compared to a condition similar to the creation of the Sansha military garrison in the South China Sea—an attempt to seek de facto control of claimed territories.[30]

India-China Boundary Dispute: An Assessment

Historically, with the 'Great Game' at play in the nineteenth century, British India's aim was to secure a buffer zone between British India and both China and Russia to maintain peace in the region. In doing so, after the collapse of China's Qing dynasty in 1911, Sir Henry McMahon, Foreign Secretary to British India, drew the boundary between Tibet and British North East India in 1913-14, primarily based on the 'principle of Watershed'. With McMahon in the chair for the Tripartite Convention, and the representatives of Tibet (Lonchen Shatra Paljor Dorje, Dalai Lama's experienced Prime Minister) and China (Ivan Chen) had attended and initialled the proceedings of the Convention at Shimla on 27 April 1914. Ivan Chen, the Chinese representative, explained that due to the conquest of Genghis Khan, Tibet had become a part of the Chinese Empire.[31] China rejected the legal standing of the Shimla Convention, on the grounds of 'Imperial legacy'. It also stated that Tibet was not a sovereign state to sign any treaty. Mao Zedong was aware of the significance of the geo-strategic location of Tibet with other countries that border it. It was in conformity with Ginsburg and Mathos who said, "[…] he who holds Tibet dominates the Himalayan

piedmont; he who dominates Himalayan piedmont, threatens the Indian sub-continent […]".[32]

The seeds of the boundary dispute between India and China were sown when PRC annexed and controlled Tibet after 'the Tibetan delegates were imposed a 17-Point Agreement'[33] on 23 May 1951. It further worsened with the Tibetan uprising in 1959 and Dalai Lama's flight from Lhasa to Khinzemane in NEFA (now Arunachal Pradesh) in March 1959.

Historically, the Western Sector has remained most contentious, with several claim lines being referred to by both India and China. In this sector, Aksai Chin is claimed by both India and China. India considers it as a part of the Union Territory of Ladakh (erstwhile part of Jammu and Kashmir). While China claims that it has been a part of the Xinjiang Uygur Autonomous Region and Tibet Autonomous Region. History draws reference to 1831 when the Sikh empire had annexed Ladakh, which was followed by the Dogra—Tibet War and a Treaty in 1842.[34] Thereafter, several claim lines were propagated: the Johnson Line (1965), the Foreign Office Line (1973), the Johnson-Ardagh Line (1897), the Macartney-MacDonald Line (1899), and many more till the India-China War 1962. While maintaining its claim on Aksai Chin, China quotes historical presence of territorial occupation to justify its claims. China considers the MacDonald Line (1899) as the correct border with India. Among many other rationales, India considers Johnson Line (1865) as the legally correct national border with China, as it was shown as a part of Jammu and Kashmir (Ladakh is a part of it). The Maharaja of Kashmir had accepted this and even constructed a fort at Shahidullah, nearby Karakoram Pass in 1865.[35] In fact, the Postal Atlas of China in 1933 showed Aksai Chin as part of J&K.[36] More notably, upon signing the Instrument of Accession on 26 October 1947, entire territories of the Princely State of Jammu and Kashmir legally and undisputedly became an integral part of India.

Why the dispute? The India-China border is a notional cease-fire line between India and China after the 1962 War. As the India-

China boundary is neither delineated on the map nor demarcated on the ground, both countries have different lines of perceptions of the boundary. The 3,488 km border is broadly divided into three prominent sectors: the Eastern Sector which covers Arunachal Pradesh and Sikkim; the Middle Sector in Uttarakhand and Himachal Pradesh; and the Western Sector in Ladakh. The term 'Line of Actual Control' is said to have been used by Chinese Premier Zhou Enlai in a 1959 note to Indian Prime Minister Jawaharlal Nehru.[37] The alignment of the border as suggested in the said letter of 7 November 1959 was not accepted by the Indian Prime Minister. In the Agreement of 7 September 1993, the term 'Line of Actual Control (LAC)' was used in a formal bilateral agreement, called 'Agreement on the Maintenance of Peace and Tranquillity along the LAC in the India-China Border Areas'. While ground transgressions across the LAC have been taking place in all three sectors, it has been observed that the western sector, from where the Chinese troops did not withdraw after the cease-fire in 1962, continued to witness maximum violations across the LAC. The situation is precarious in the Western Sector because, unlike the Central and Eastern Sectors where the boundary runs predominantly along the watershed, the LAC in the Western Sector does not follow any well-defined geographical features.

Even between the 1950s and 1962, and thereafter, China continues to incrementally transgress westwards of the LAC—referred to as salami slicing—and thus, create yet another claim line. A few cases in point are the major incidents of Nathu La (1967), Sumdorong Chu (1986-87), Depsang (2013), Chumar (2014) and Eastern Ladakh (2020).

Mao Zedong launched the Cultural Revolution in China between 1966 and 1976 to reassert his authority over the Chinese government, which created huge internal turmoil and chaos, and negatively impacted its economy. In hindsight, it appears that the border skirmish between India and China at Nathu La in 1967 was triggered to divert the attention of its people from the chaos and killings that took place at the peak of the

Cultural Revolution, as also the tension building up on the border with Soviet Russia on Ussuri River.

In this perspective, as the study of the settlement of border disputes would suggest that generally, China has not offered undue concessions where it saw economic and strategic advantages.

During the preparations for the 19th National Congress of the CPC in 2017, the PLA ventured to construct a road in Doklam—at the tri-junction of India, China and Bhutan. It resulted in a standoff for 72 days (18 June 2017-28 August 2017). Such a move would have given China the strategic advantage, as Doklam is located between Tibet's Chumbi Valley to the North, Bhutan's Ha Valley to the East, and to India's state of Sikkim to the West, as also would give access to the strategic Siliguri Corridor. What is noteworthy is that soon after the Doklam standoff, to realise the Chinese Dream, Xi announced on 18 October 2017 stating the " […] we have developed a strategy for the military under new circumstances […]".[38] In this regard, with the growing influence of China in the IOR and in India's strategic periphery, New Delhi needs to take note of China's three warfare strategy : media, psychological and legal warfare.

Incidents at the LAC

Although the 3,488 km border had remained without any incidents of firing since the border skirmish at Nathu La in 1967 and the firing at Tulung La in 1975, it has continued to witness incidents/transgressions across the LAC and standoffs. The tensions on the LAC are caused by three major factors: one, differing perception of the non—delineated and non-demarcated border; two, development of infrastructure close to or when perceived to be across the border; and three, movement of additional force levels and training exercises in proximity of the borders without informing the opposing side. While China has continued to build its infrastructure (roads, rails, bridges, airfields, heli-bases, oxygen stations, logistic warehouses, power, and communications networks) over the past two decades, surprisingly, it

does not want India—which started much later—to build even the essential infrastructures on its own side of the border.

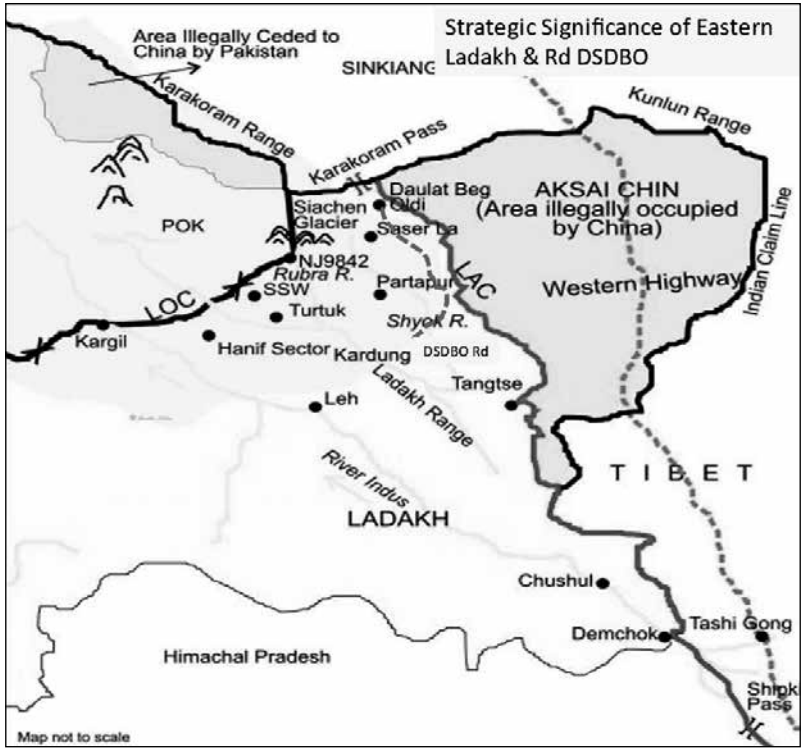
Strategic Significance of Eastern Ladakh

According to the recorded statistics, there has been an increase in the incidents at the LAC since 2019, of which majority of them were in Eastern Ladakh (Western Sector). Therefore, it makes it imperative to analyse the strategic significance of Eastern Ladakh.

Eastern Ladakh is a sharp wedge with Gilgit-Baltistan to the west (Pakistan Occupied Jammu and Kashmir, POJ&K), through which passes the CPEC linking Xinjiang to deep-sea harbour at Gwadar (Balochistan). China has a huge stake in the security of the CPEC. To safeguard its newly created strategic assets, China has positioned its security personnel at all important segments of the CPEC, especially in the Gilgit-Baltistan region. Also, Pakistan has raised Special Security Division (SSD), from Its regular and paramilitary forces, to provide security to the CPEC in its entirety, not confined to the Gilgit-Baltistan region alone. On the east lies the contentious Aksai Chin, about 38000 sq km, which is under the occupation of China. It falls both under the administrative jurisdiction of Xinjiang and TAR. China had also constructed a strategic road through Aksai Chin connecting Kashgar (Xinjiang) with Lhasa (Tibet), with 179 km road running through the northeast portion of Aksai Chin. In addition, there are lead and zinc mines in parts of the Aksai Chin.[39] Given India's claims to the Aksai Chin, China is sensitive to any development that threatens the security of the strategic China National Highway—G219. Immediately to the north of DBO—an airstrip at an altitude of 16,550 feet (Eastern Ladakh)—lie two important communication nodes cum choke points: first, the Karakoram Pass (5,540 m or 18,176 feet) about 18 km north of the DBO; second, the strategic communication network that connects Xinjiang with US$ 62 billion CPEC Project in Pakistan, and the National Highway G219 (2,342 km). On completion of the latter, it will be the longest National Highway

(over 10,000 km). Therefore, while Eastern Ladakh separates China and Pakistan by this sharp wedge, it also provides certain strategic options to India, and depth to our politically sensitive area of Chushul and other areas in the hinterland, as noted in Figure 1.

Figure 1: Strategic Significance of Eastern Ladakh



Source: Adapted from Chinoy (2020) and annotated by the author (rough alignments).

The strategic Darbuk-Shyok-DBO (DSDBO) road has been in the news as it has been constructed in about 18 years (2001-19), traversing some of the most inhospitable terrains and weather conditions. The 255 km road runs almost parallel to the LAC, being closest to the Galwan Valley. It provides access to the areas adjoining Hot Spring, Galwan Valley, Raki Nullah, Jiwan

Nullah and Chip Chap river. Given the altitude and difficulties experienced earlier by the Indian Army, it would certainly facilitate regular maintenance of troops, and strengthen India's posture, both operationally and logistically. During the Council of Foreign Ministers of the Shanghai Cooperation Organisation (SCO), in Moscow in September 2020, China declared that it does not recognise the Union Territory of Ladakh and any infrastructure being constructed (meaning closer to the LAC) in it. Interestingly, China did not raise any objection to the preparations and landing of an AN-32 on the airfield at DBO on 31 May 2008, after a gap of 45 years. Apparently, the Chinese have now felt threatened with the completion of the strategic road DSDBO, which was still under construction in 2008.

China's strategic interests are also evident from its increasing transgressions at the LAC. For instance, during a reply to an unstarred question (No. 1577) in the Lok Sabha on 27 November 2019,[40] India's Minister of State for Defence gave a year-wise details of the transgressions that entailed: 2016-273, 2017-426 and 2018-326. Concurrently, some details of incidents at the LAC (that includes post abrogation of Article 370 on 5 August 2019) are listed in Table 1.

Table 1: Chinese Transgressions at the LAC

Incidents on Line of Actual Control				
Year	**West**	**East**	**Mid**	**Total**
2019	497	138	28	663
2018	284	89	31	404
2017	337	119	17	473
2016	208	71	17	296
2015	342	77	9	428

(Western, Eastern, Middle Sectors)

Source: Adapted from Singh (2020).[41]

Owing to the trend, it is noted that the incidents in the Western Sector of the LAC increased by about 75 per cent between 2018 and 2019; while the Eastern Sector (Arunachal Pradesh and Sikkim) witnessed almost one-fifth of the Chinese transgressions.[42] Most notably, in the first four

months (January 2020-April 2020), post abrogation of Article 370 on 5 August 2019, the number of incidents at the LAC were 170 (including 130 in Ladakh) against 110 such instances in the same period in 2019.[43] Despite the spread of COVID-19 across the world, the Western Sector remained the focus of transgressions that finally resulted in the PLA's premeditated transgressions at multiple points along the LAC in early May 2020. This further elucidates the design in China's military posture.

Strategic Design towards Transgressions and Non-Resolution of the Boundary Dispute

Despite the border management mechanisms and confidence-building measures in place, and the periodic engagements at different levels, including the meeting between the heads of both India and China at Wuhan (May 2018) and Mammalapuram (October 2019) respectively, India and China met with a standoff at Naku La in Sikkim and Eastern Ladakh in early May 2020. It was a clear breach of the agreements and protocols by the Chinese. Further, the incidents at the LAC in May 2020—during the peak period of the pandemic COVID-19—were marked by increased assertiveness and transgressions especially at multiple points in Eastern Ladakh, physical scuffles, and casualties on both sides; standoffs backed by build-up of large force levels including tanks, infantry combat vehicles, artillery and air defence guns, radars, and communication setups; and activation of the air bases closer to the LAC.

What was noteworthy was India's resolve and response mechanism against China on five counts: First, robust mobilisation and deployment of Indian forces to check the PLA's designs and aggressiveness; second, occupation of strategic heights on the Kailash Range to the South of Pangong Tso, in the Chushul subsector in end August 2020; third, to build up and maintain logistics balance during the severe winters of Ladakh; fourth, to continue with the development of infrastructure on own side of the borders; and fifth, there was tacit support of all elements of national

power—political, economic, diplomatic, trade, investment, information—to counter the Chinese' designs. These actions had certainly changed the narrative and the equation between the two opposing forces that were deployed eyeball to eyeball. Given India's political and military will to stand up to the Chinese designs, it has bolstered the confidence and morale of the Indian troops. India has sent a clear message that China must not indulge in incremental aggressive actions to lay claim to illegal territories, and that it would never be able to get any additional territory in Ladakh, as also in Arunachal Pradesh, as claimed by it, by use of force or otherwise. In other words, winning without fighting would be impossible!

In this context, the key query remains: Why did China choose to indulge in such aggressive actions in May 2020, especially when the pandemic COVID-19 was spreading at an alarming speed worldwide?

More often, such actions are a result of the cumulative effect of many factors that continue to build up over a period of time, but get triggered by an incident. As Anath Krishnan suggests that as per a report authored by a senior figure at an influential Chinese think-tank, it has linked the current tensions along the LAC to India's move in 2019 to abrogate Article 370 and change the status of the state of Jammu and Kashmir—a decision that China had voiced opposition to.[44] It may also be prudent to draw some inference from the following statements:

- In a rare interview that Xi Jinping, then Governor of Fujian (1999 to 2002), gave in August 2000 to a Chinese Journal stated: "If you want to become a General you must be able to win a battle ... […]. Only if there are battles, there are opportunities".[45]

  While attending a plenary meeting of the delegation of the PLA and PAP during the parliament session on 25 May 2020, 20 days after the continuing military standoff in Eastern Ladakh, Xi ordered the military to think about worst-case scenarios, scale up training and battle preparedness, promptly and effectively deal with all sorts of complex situations.[46]

- While cautioning the US against a faltering China, Michael Beckley posited that, "China's economic conditions have declined steadily since 2008 Financial Crisis […]. When rising powers have suffered such slowdowns in the past, they become more repressive at home and more aggressive abroad".[47]

China had been under pressure both on the domestic and international fronts: China's economic slowdown,[48] high rate of unemployment, internal security conditions especially with the persistent unrests in Hong Kong and Xinjiang, relationship with Taiwan, global resentment against China towards its aggressive actions in the South and East China Seas, and investigation of the origin and spread of the coronavirus. To support Pakistan, China had objected to India's actions of abrogation of Article 370 in Jammu and Kashmir and declaration of Ladakh as a Union Territory. China needs to know that the abrogation of Article 370 is India's internal matter, and ever since then, the security and governance situation has certainly improved in Jammu and Kashmir. What can be construed is that more than any military aims, China perhaps wanted to send a strong message of it being a world power: that it can take all domestic and international pressures in its stride, and that India's tilt towards the US would not be of much help.

Agreements, Protocols and Visits

To maintain peace and tranquillity along the borders, both India and China have signed five important agreements and protocols between 1993 and 2013. Out of the five such agreements, the agreement of 2005 on "Political Parameters and Guiding Principles for the Settlement of the India-China Boundary Question" has been most significant.[49] In this, Article III mentions "[...] meaningful and mutually acceptable adjustments to their respective positions on the boundary question.... Boundary settlement must be final, covering all sectors of India-China

Boundary".[50] While Articles VII and VIII mention "[...] safeguard due interests of their settled populations in the border areas" which mainly has reference to Tawang.[51] Despite this agreement, the transgressions in the LAC continued, predominantly by the PLA.

On 23 November 2006, the then Chinese President and General Secretary, Hu Jintao was expected to visit India, and also discuss the boundary dispute. However, a week before his arrival, the then Chinese Ambassador to India, Sun Yuxi, categorically issued a statement saying: "In our [China's] position, the whole of Arunachal Pradesh is a Chinese territory. And Tawang is only one of the places in it. We are claiming all of that. That is our position".[52] This can be interpreted as a Chinese design, wherein such a statement aimed at sending a message that India should not expect any meaningful discussion on the subject.

Interestingly, in early 2013, there was a great amount of publicity over the forthcoming visit of the Chinese Premier Li Keqiang to India. Unsurprisingly, a month before the visit, on 15 April 2013, the PLA established a temporary camp at Depsang Plains on the Indian side, about 20 km across the LAC, due to which the tensions remained for three weeks. Again, the message was quite clear that any discussions on the boundary dispute were unlikely to yield any results. Similarly, in the event of President Xi Jinping's visit to India on 18 September 2014, that marked the visit by a Chinese President after eight years, eight days prior to the visit, there was a serious incident at Chumar—shifting the focus on the LAC. India must be careful of China's such a practice, as Shiv Shankar Menon argues the Chinese transgressions across the LAC is a "classic case of two steps forward one step back, which leaves China with a net gain of one step".[53]

Also to note, since ancient times, the Himalayas have been an active bridge between Indian and Tibetan civilisation. However, post-Sino-Indian War of 1962, this important civilisational link has been broken. While the land border extends over 3,488 km, there are only three land

ports across the entire stretch of the border; namely Shipki La (Himachal Pradesh), Lipulekh (Uttarakhand), and Nathula (Sikkim). Despite several traditional trade routes that existed between India and Tibet, the Chinese have not opened any land ports either in Ladakh or Arunachal Pradesh, which form over 80 per cent of the land border. Such actions are nothing but a design.

As one can rightly point, most of the incidents narrated are more by design than by default. While Sun Tzu's strategy of 'deception, concealment and surprise' remains central to winning without fighting, Graham Alison highlights that the Chinese have strategic patience and 'taking a long term view comes naturally to them'.[54] These are in line with Henry Kissinger's thoughts, as he suggests "[…] Chinese style of dealing with strategic decisions: thorough analysis; careful preparations; attention to psychological and political factors; quest for surprise; and rapid conclusion".[55] However, contrary to these views, China has adopted an aggressive three-pronged strategy to counter global resentment against it in recent times, as witnessed in the form of—Debt Trap, Wolf Diplomacy and Military Coercion.

Since it is difficult to know the exact reason for the Chinese aggression and escalation in May 2020, it was equally intriguing to see the PLA disengaging and withdrawing with speed, as per the timelines of the agreement. The question that needs an answer is: Would the India—China boundary dispute be resolved in the near future? China considers India as one of its competitors in economic, political, and strategic space. Therefore, to stymie India's ambition of becoming a regional cum global power, China would continue to resort to: First, exploit India's vulnerabilities; second, keeping the boundary unsettled as it is of great advantage and a bargaining chip to China; third, ensure that India remains embroiled with the border disputes with Pakistan in the west, and China in the north, and thus, dilute India's focus on the maritime domain (Indian Ocean Region) which is the battlespace of the future.

Besides, with an uncertain and volatile environment, it also ensures that India continues to support China on myriad issues at the global forums.

Due to the sequence of events of the standoff, leading to casualties on both sides, there is a huge 'trust deficit' between the two countries. One cannot ignore the latest report of Stockholm International Peace Research Institute (SIPRI) which states that China's military expenditure, the second-highest in the world, is estimated to have totalled US$ 252 billion in 2020, a rise of 1.9 per cent from the previous year. Chinese military spending has risen for 26 consecutive years.[56] Also, considering the 'all weather friendship' between China and Pakistan, and with the work on the CPEC being executed on the ground in POJ&K, India must be wary of the China-Pakistan nexus. China has been building up its military preparedness in the Western Theatre Command—the largest theatre command covering the geographical areas of the two erstwhile military regions, namely Lanzhou and Chengdu. Considering the tension on the borders with China, while speaking at the 'Hindustan Times Leadership Summit' on 26 November 2020, India's Minister of Defence, Rajnath Singh said, "the government has given a free hand to the armed forces to counter any changes across the LAC with China, with full force".[57] While India's endeavour has been to resolve the boundary question to maintain peace and stability, it cannot be intimidated and coerced by the nuclear-armed rival. Notwithstanding the differences, it is also to note that during the standoff on the Western Sector, both India and China have displayed realistic maturity in maintaining dialogue at different levels to defuse the tensions, disengage and eventually de-escalate.

Based on a series of talks between the senior military-diplomatic leaders of India and China, and Working Mechanism for Consultation and Coordination (WMCC), both the militaries have completed the withdrawal of troops, weapons and other military hardware from the north and south banks of Pangong Lake areas as part of an agreement. Both sides had agreed to continue with their discussions and negotiations

to ensure that a similar exercise of disengagement takes place at Gogra, Hot Spring, Galwan and Depsang Plains. However, it appears from the 11th Round of Senior Military Commanders level talks that both sides could not reach an amicable process of disengagement and de-escalation for the remainder friction points. Apparently, the Chinese have reportedly hardened their stance regarding disengagement at other friction points. Therefore, unless the process of disengagement, de-escalation, and de-induction of additional troops takes place by both sides, the situation would continue to remain tensed at the LAC.

Way Ahead

> *"China has made it clear that she doesn't see the rise of India as being in her interest, whether it's UN Security Council or NSG membership."*
>
> —Shiv Shankar Menon
>
> Former Indian National Security Advisor[58]

Due to China's aggressive designs, the biggest casualty in the relations between the two countries has been the 'trust factor'. To face the challenges posed by China, India must be strong: economically, militarily, and technologically. It is well known that deterrence is a function of 'capability, resolve and communication of the resolve on crossing of the threshold of tolerance'. Therefore, to address its security concerns, India needs to review its policy involving political, economic, trade and investment, military and information, public perception related Issues. Militarily, India should review its military strategy pertaining to building intelligence and surveillance capabilities, streamlining command and control systems, better management of disputed borders, development of infrastructure, building indigenous technology-enabled systems, and cyber and Information warfare systems. With the allocation of additional budget, India should aim to build its capacity

and capabilities and improve its hard, soft, and demonstrated power to address its security concerns. India should be prepared for a long haul with the Chinese on the LAC.

To build bridges of understanding and trust, both India and China would have to adhere to the agreements and protocols, and remain transparent and sensitive to each other's requirements. Both countries should also gradually build positive perception among the populace by various measures at different levels. China must realise that India, given its potential and resolve, would certainly take its place as a regional and global power in the near future. As noted, in March 2021, China called for India and China "to create enabling conditions for the settlement of the boundary dispute".[59] Therefore, to do so, it is time that both countries must act with a sense of urgency to restore the status quo on the LAC of April 2020, by disengaging and deescalating the situation. As the neighbours and two prominent nuclear-armed states of Asia, both countries should engage at all levels and work towards the resolution of the boundary dispute in an early timeframe to bring peace and stability in the region. The earlier the better!

Notes

1. Chris Buckley and Keith Bradsher (2017), "Xi Jinping's Marathon Speech: Five Takeaways, President Xi Jinping at the 19th Communist Party", *The New York Times*, 18 October 18, 2017. Available online at https://www.nytimes.com/2017/10/18/world/asia/china-xi-jinping-party-congress.html, accessed on February 5, 2021.
2. Narendra Modi, PM Narendra Modi's message to China: Top five quotes, *The Times of India*, July 3, 2020. Available online at https://timesofindia.indiatimes.com/india/pm-narendra-modis-message-to-china-top-five-quotes, accessed on February 5, 2021.
3. "Chinese economy to overtake US 'by 2028' due to Covid", *BBC News*, December 27, 2020. Available online at https://www.bbc.com/news/world-asia-china-55454146, accessed on February 5, 2021.
4. Office of the Secretary of Defense (2020), "Annual Report to Congress: Military and Security Developments involving the People's Republic of China 2020", p. 18. Available online at https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF, accessed online February 7, 2021.

5. *In their Own Words: Foreign Military Thought, Science of Military Strategy (2013)*, China Aerospace Studies Institute, Air University. Available online at https://www.airuniversity.af.edu/Portals/10/CASI/documents/Translations/2021-02-08%20Chinese%20Military%20Thoughts-%20In%20their%20own%20words%20Science%20of%20Military%20Strategy%202013.pdf?ver=NxAWg4BPw_NylEjxaha8Aw%3d%3d, accessed on February 20, 2021.
6. Carl Von Clausewitz (1976), *On War*, Princeton, NJ: Princeton University Press, pp. 602-603.
7. Major General PJS Sandhu (Retd) (ed.) (2015), *1962: A View from the Other Side of the Hill*, United Service Institution of India, p. 1.
8. Ibid.
9. John Powers (2004), *History as Propaganda: Tibetan Exiles versus the People's Republic of China*, Oxford: Oxford University Press. Also see, Tsering Shakya (1999), *The Dragon In The Land Of Snows*, New York: Columbia University Press.
10. A. Tom Grunfeld (1996), *The Making of Modern Tibet*, Armonk, NY: M.E. Sharpe, p. 107.
11. Alfred P. Rubin (1960), "The Sino-Indian Border Disputes", *International & Comparative Law Quarterly*, Vol. 9, Issue 1, pp. 96-125.
12. Ajoy Chatterjee (2011), "Five Fingers of Tibet", *The Morung Express*, 14 January 2011. Available online at https://morungexpress.com/five-fingers-tibet, accessed on February 10, 2021.
13. Michael D. Swaine and Ashley J. Tellis (2000), *Interpreting China's Grand Strategy: Past, Present, and Future*, Santa Monica, CA: RAND, p. 65.
14. Ryan Kilpatrick (2011), "National Humiliation in China", E-International Relations, 20 October 2011. Available online at https://www.e-ir.info/2011/10/20/national-humiliation-in-china/, accessed on February 10, 2021.
15. Ibid.
16. William A. Callahan (2004), "National Insecurities: Humiliation, Salvation, and Chinese Nationalism", *Alternatives 29*, pp. 199-218.
17. To note, Xi Jinping has advanced the modernisation goal of 2035, to achieve 'mechanisation, informatisation and intelligentisation' by 2027—the PLA Centennial Goal. See, Brian Hart et al. (2021), "China's 2027 Goal Marks the PLA Centennial, Not an Expedited Military Modernisation", *China Brief*, Vol. 21, Issue 6, The Jamestown Foundation, March 26, 2021. Xi Jinping has advanced the modernisation goal of 2035, to achieve 'mechanisation, informatisation and intelligentisation' by 2027—the PLA Centennial Goal.
18. Joel Wuthnow (2019), *China's Other Army: The People's Armed Police in an Era of Reform*, China Strategic Perspectives, No. 14, National Defense University Press: Washington, D.C. To note, a legislation was passed by China's National People's Congress (NPC) on 22 June 2018, by which China's Coast Guard came under the control of the People's Armed Police and, ultimately, under the command of China's CMC.
19. Robert A. Divine, et al. (2007), *America Past and Present. II: Since 1865*, 8th edition, Pearson, pp. 819-821.
20. Major Akshat Upadhyay (2013), "China's Border Wars", *Journal of the United Service Institution of India*, Vol. CXLII, No. 591, January-March 2013, https://usiofindia.org/publication/usi-journal/chinas-border-wars/, accessed online February 15, 2021.

21. Basil Ashton, et al. (1984), "Famine in China, 1958-61", *Population and Development Review*, Vol. 10, No. 4, December 1984, pp. 613-645.
22. Clayton D. Brown (2012), "China's Great Leap Forward", *Association of Asian Studies*, Volume 17:3 (Winter 2012): US, Asia, and the World: 1914-2012. Also see, M. Taylor Fravel (2008), *Strong Borders, Secure Nation: Cooperation and Conflict in China's Territorial Disputes*, Princeton: Princeton University Press, pp. 5-6.
23. Amrita Jash (2018), "Mao Zedong's Art of the 1962 War Perception of Opportunity Versus Perception of Threat", Manekshaw Paper, No. 76, Centre for Land Warfare Studies. Available online at https://www.claws.in/publication/mao-zedongs-art-of-the-1962-war-perception-of-opportunity-versus-perception-of-threat/, accessed on February 15, 2021.
24. There is huge ambiguity about the exact alignments of several claim lines being quoted by both China and India.
25. Nilova Roy Chaudhury (2006), "China lays claim to Arunachal", *Hindustan Times*, 29 November 2006. Available online at https://www.hindustantimes.com/india/china-lays-claim-to-arunachal/story-html, accessed on February 10, 2021.
26. Major Akshat Upadhyay (2013), "China's Border Wars", n. 20.
27. Office of the Secretary of Defense (2020), "Annual Report to Congress", n. 4, p. 9.
28. Li Xiaobing (2012), *China at War: An Encyclopedia*. ABC-CLIO, p. 445.
29. Gabriel Dominguez (2021), "Manila accuses China Coast Guard of 'belligerent actions' against PCG near Scarborough Shoal", Janes, 4 May 2021. Available online at https://www.janes.com/defence-news/news-detail/manila-accuses-china-coast-guard-of-belligerent-actions-against-pcg-near-scarborough-shoal, accessed on May 8, 2021.
30. Rukmani Gupta (2013), "Air Defence Zone and Brinkmanship", Institute of Peace and Conflict Studies, 26 November 2013. Available online at http://www.ipcs.org/comm_select.php?articleNo=4191, accessed on February 14, 2021.
31. Claude Arpi (2017), *Tibet: The Last Months of a Free Nation, Part-1*, New Delhi: Vij Books, p. 28. Here, Arpi mentions that Tibet's representative was extremely well prepared, while the Chinese had no documents.
32. George Ginsburg and Michael Mathos (1964), *Communist China and Tibet*, Martinus Nijhoff: The Hague.
33. Claude Arpi (2017), *Tibet: The Last Months of a Free Nation*, n. 31.
34. Alfred P. Rubin (1960), "The Sino-Indian Border Disputes", n. 11.
35. Sujon Chinoy (2020), "The Forgotten Fact of 'China-Occupied Kashmir'", Indian Defence Review, 20 November 2020. Available online at http://www.indiandefencereview.com/spotlights/the-forgotten-fact-of-china-occupied-kashmir/ , accessed on February 7, 2021.
36. Tsering Samphel (2020), "How China made inroads into Ladakh region", *Border Affairs*, Vol. 21, No. 4, July-September 2020. Available online at https://app.box.com/s/d5j363aq0umir3xswk4t14c5mss37yki, accessed on February 8, 2021.
37. Steven A. Hoffman (1990), *India and the China Crisis*, Berkeley: University of California Press, p. 80.

38. Xi Jinping (2017), "Secure a Decisive Victory in Building a Moderately Prosperous Society in All Respects and Strive for the Great Success of Socialism with Chinese Characteristics for a New Era", Speech at the 19th National Congress of the Communist Party of China, 18 October 2017, http://www.xinhuanet.com/english/download/Xi_Jinping's_report_at_19th_CPC_National_Congress.pdf, accessed online February 7, 2021.
39. Huoshaoyun is a mountain with significant lead-zinc deposit in the disputed region of Aksai Chin in Hetian County in Xinjiang, China. The development of the site into a mining operation started in 2017. The mine is owned by Guanghui Energy. It is expected to become world's 7th largest lead-zinc mine.
40. See, Parliament of India, Lok Sabha, "Government of India, Ministry of Defence, Lok Sabha", 27 November 2019. Available online at http://loksabhaph.nic.in/Questions/QResult15.aspx?qref=7965&lsno=17, accessed on February 10, 2021.
41. Sushant Singh (2020), "Big surge in Chinese transgressions, most of them in Ladakh", The Indian Express, 22 May 2020. Available online at https://indianexpress.com/article/india/aksai-chin-army-big-surge-in-chinese-transgressions-most-of-them-in-ladakh-6421674/, accessed on February 9, 2021.
42. Ibid.
43. Ibid.
44. Ananth Krishnan (2020), "Beijing think-tank links scrapping of Article 370 to LAC tensions", *The Hindu*, 20 June 2020. Available online at https://www.thehindu.com/news/national/beijing-think-tank-links-scrapping-of-article-370-to-lac-tensions/article31815266.ece, accessed on February 8, 2021.
45. Major General Raj Mehta (Retd) (2021), "The Chinese Challenge", Mission Victory India, 13 January 2021. Available online at https://missionvictoryindia.com/the-chinese-challenge/#:~:text=He%20said%3A%20, accessed on February 5, 2021.
46. "Scale-up battle preparedness, Xi Jinping tells Chinese military", *The Economic Times*, 28 May 2020. Available online at https://economictimes.indiatimes.com/news/defence/scale-up-battle-preparedness-xi-jinping-tells-chinese-military/articleshow/76011659.cms?from=mdr, accessed on February 10, 2021.
47. Michael Beckley (2019), "The United States Should Fear a Faltering China, Beijing's Assertiveness Betrays Its Desperation", *Foreign Affairs*, October 28, 2019.
48. According to the IMF forecast of April 2020, China growth rate was given as 1 per cent. It was a sharp decline from its high trajectory growth rate.
49. See, Ministry of External Affairs, Government of India (2005), "Agreement between the Government of the Republic of India and the Government of the People's Republic of China on the Political Parameters and Guiding Principles for the Settlement of the India-China Boundary Question", 11 April 2005. Available online at https://mea.gov.in/bilateral-documents.htm?dtl/6534/Agreement+between+the+Government+of+the+Republic+of+India+and+the+Government+of+the+Peoples+Republic+of+China+on+the+Political+Parameters+and+Guiding+Principles+for+the+Settlement+of+the+IndiaChina+Boundary+Question, accessed on February 17, 2021.

50. Ibid.
51. Ibid.
52. Quoted in Nilova Roy Chaudhury (2006), "China lays claim to Arunachal", n. 25.
53. See, "'Early Days, Mustn't Draw Big Conclusions on Chinese Withdrawal': Ex-NSA Shivshankar Menon", The Wire, 16 February 2021. Available online at https://thewire.in/external-affairs/watch-early-days-mustnt-draw-big-conclusions-on-chinese-withdrawal-ex-nsa-shivshankar-menon, accessed on February 20, 2021.
54. Graham Allison (2017), *Destined for War: Can America and China Escape Thucydides Trap?*, New York: Houghton Mifflin Harcourt.
55. Henry Kissinger (2011), *On China*, New York: The Penguin Press, p. 189.
56. "Global military spending rises 2.6% in 2020 despite pandemic hit", Routers, 26 April 2021. Available online at https://www.reuters.com/business/aerospace-defense/global-military-spending-rises-26-2020-despite-pandemic-hit-2021-04-26/, accessed on April 28, 2021.
57. "Government Has Given Army Free Hand To Counter PLA Across LAC: Rajnath Singh", *Business World*, 27 November 2020. Available online at http://www.businessworld.in/article/Government-has-given-Army-free-hand-to-counter-PLA-across-LAC-Rajnath-Singh/27-11-2020-347182/, accessed on February 15, 2021.
58. Indrani Bagchi (2021), "China Rising Support for Pakistan, and their collusion, may affect our interests: says former NSA Shiv Shankar Menon", *The Times of India*, 25 April 2021. Available online at https://timesofindia.indiatimes.com/home/sunday-times/all-that-matters/chinas-rising-support-for-pakistan-and-their-collusion-may-affect-our-interests-says-former-nsa-shiv-shankar-menon/articleshow/82234601.cms, accessed on April 28, 2021.
59. Ananth Krishnan (2021), "India, China should create 'enabling conditions' to settle dispute", *The Hindu*, 7 March 2021. Available online at https://www.thehindu.com/news/international/india-china-should-create-enabling-conditions-to-settle-border-dispute-says-wang-yi/article34012426.ece, accessed on March 10, 2021.

Biological Warfare: An Emerging Threat of the Future

P. R. Kumar

Abstract

We are living in a geo-politically transforming world, forcing nations to persistently engage in cooperation, competition, cooperation and even conflict. While the potential global threat and disastrous consequences of biological warfare was known to domain and few security experts, this threat has come to the forefront and greater scrutiny ever since the outbreak of the COVID-19 pandemic. The mind-boggling numbers of human fatalities and casualties, its spiralling and continuing destructive potential (evolving mutations), along with consequences to global economy and way of life has clearly illustrated that the biological threat can be even more devastating than nuclear, because they can persist, propagate and spread through a population globally. Unfortunately, the existing agreements/ conventions specially the Biological Warfare Convention (BWC), signed and ratified almost universally (183 nations), is widely acknowledged, but lacks compliance monitoring and verification mechanisms- making it far from effective in controlling biological weapons (BW). In this perspective, the paper examines the emerging threat of biological warfare and the implications it holds for the world at large and India in particular.

Lieutenant General **P. R. Kumar** (Retd) was Director General of Military Operations, Indian Army.

Introduction

> *"We must come together to prevent, detect, and fight every kind of biological danger whether it is a pandemic like H1N1, a terrorist threat, or a treatable disease".*
>
> —Barack Obama, United Nations General Assembly (2011)[1]

An emerging multi-polar world, rise of nationalism and authoritarianism, shift to bilateralism from multilateralism, aggressive hegemonistic China along with Russia and some like-minded nations trying to re-shape the global geopolitical landscape, declining relevance of deterrence of major powers, omnipresent media, increasing digitisation coupled with rapid technological advancements in all fields have created a turbulent, unstable international security environment where all nations are persistently engaged in 24x7 competition, confrontation (occasionally cooperation) and if national interests dictate even conflict. The very concept of security has changed into a multi-domain configuration from the traditional historical and military threat. While the potential global threat and disastrous consequences of biological weapons (BW) were known to domain and few security experts, this threat has come to the forefront and greater scrutiny ever since the outbreak of the COVID-19 pandemic. The mind-boggling numbers of human fatalities and casualties, its spiralling and continuing destructive potential (evolving mutations), along with consequences to global economy and way of life has clearly illustrated that the biological threat can be even more devastating than nuclear, because they can persist, propagate and spread through a population globally.[2] Advancements in biotechnology and genetic engineering have made it easier for nations and unfortunately terrorist groups (even lone-wolf operators) to have relatively easy access to bio-weapons and create bio-warfare capabilities. India with its troubled unscrupulous neighbourhood, large and diverse population, fairly condensed living clusters, needs to

conduct both proactive and reactive actions against the threat of BW. As a regional power, with a modern diverse pharmaceutical industry, India can contribute substantially, and be a global leader in the fight against BW.

The article aims to provide an overview of the understanding of BW, its brief historical background and instances of use, existing protocols and agreements and its tenuous efficacy, and examines the emerging global threat and its scope, along with an overview of COVID-19 in relation to BW. In addition, the paper also highlights the Indian stance, and its capabilities to become the 'game changer' nation in the fight against BW, and concludes by making global recommendations and actions against BW.

Key Definitions and Characteristics

- *Biological Warfare:* Merriam Webster defines it as warfare involving the use of biological weapons; Wikipedia also annotates it as germ warfare which is the use of biological toxins or infectious agents such as bacteria, viruses, insects, and fungi with the intent to kill or incapacitate humans, animals or plants as an act of war.
- *Biological Weapons:* Also termed as biological threat agents, or biological weapon agents (BWA) which are living organisms or replicating entities (viruses which are not universally considered 'alive'). Entomological (insect) warfare is a subtype of BW. The World Health Organisation (WHO) describes biological weapons as "microorganisms like virus, bacteria, fungi, or other toxins that are produced and released deliberately to cause disease and death in humans, animals or plants".[3]
- *Bioterrorism:* It is terrorism that involves the intentional release or dissemination of biological weapon agents (BWA). The success of bio-terroristic attempts is defined by the measure of societal disruption and panic, and not necessarily by the sheer number of casualties. Thus, making only a few individuals ill by the use of crude methods may be sufficient, as long as it creates the impact that is aimed for.[4]

- *Bio-crime:* Bio-crime implies the use of a biological agent to kill or make ill a single individual or small group of individuals, motivated by revenge or the desire for monetary gain by extortion, rather than by political, ideological, religious or other beliefs.
- *Agro-terrorism:* Bioterrorism used to cause significant economic losses by infecting livestock or crops, or contaminating buildings. Modern agribusiness is vulnerable to anti-agricultural attacks by terrorists, and such attacks can seriously damage the economy as well as consumer confidence. The destructive activity using BW is called 'agro-bioterrorism' and is subtype of agro-terrorism.[5] Outbreaks of diseases such as foot and mouth disease, rinderpest,[6] and Newcastle disease[7] lead to loss of the nation's disease-free status and subsequent bans on the export of animals, meat, and derived products, causing significant economic losses.[8] Although not an attack, the foot and mouth disease outbreak in the UK in 2001 directly affected the private and public sectors, with an estimated loss of € 8 billion.[9] The clean-up of various buildings involved after the 2001 anthrax letters cost the US government $320 million.[10] Although this kind of agro-terrorism has not yet occurred, the threat should be taken seriously, given the impact that it may have.
- *Genetic Engineering:*[11] Genetic engineering is the process of human intervention to transfer functional genes (DNA) between two biological organisms. In the BW/BT context, it is the manipulation of genes to create new pathogenic characteristics (increased survivability, infectivity, virulence, drug resistance, etc). Organisms with altered characteristics are the "next generation" biological weapons.

BWA: Characteristics and Suitability & Impact of Biotechnology

Biological weapons are characterised by low visibility, high potency, substantial accessibility and relatively easy delivery. BWA are

unconventional weapons that can be delivered by unconventional means like aerosol sprays [most effective and most probable to be used including by terrorists, because of their particle size (1-5 μm) due to which they are most efficiently delivered to their target (air sacs of lung)], food and water contamination, conventional explosive munitions or by covert injections. Because of their concealed delivery, easy transportation and difficult identification, they are readily adaptable for terrorist operations or to gain political advantages. The requirements for a biological attack are obtaining a pathogenic organism or toxin to multiply in such a way that the agent retains its viability and attributes, are amenable to enter a human being in sufficient quantities to cause disease. Thus, a vial containing an organism, even if it is pathogenic, does not constitute a biological weapon. The Aum Shinrikyo[12] attack shows that, unless the technological hurdles are successfully overcome, the outcome will be 'a dud'. Hopefully, the uncertainty in the outcome will act as a deterrent for terrorists, and be a reason for them to use more conventional weapons.

There exists an array of organisms, which may be more or less suited for this purpose. The traditional BWA of both the US and former Soviet biological weapon programmes were chosen for this task after a long and careful selection process that narrowed the long list of potentials down to a few. The agents selected were considered to be suited for causing mass casualties because they were found to share a number of characteristics,[13] namely; high morbidity, and potentially highly lethal; highly infectious or high toxicity (low ID 50 or ICt50); suited for mass production and storage until delivery without loss of pathogenic potential; suited for wide-area delivery, and hardy enough to withstand the delivery process; relatively stable in the environment after dissemination for a period long enough to infect humans; suitable for having the potential as a BWA improved by genetic engineering and weaponisation processes. Terrorists, naturally may not be so fussy for example, no long-term storage or mass delivery requirements, providing more options of BW. For a list of potential

BWA, early symptoms/prodrome, clinical syndrome and diagnostic assay, examples of BT and trends in agents; use endnotes links.[14]

The detection of such an attack requires recognition of the clinical syndromes associated with various BWA. Diagnosis can be made on clinical grounds and on investigations. Protective measures can be taken against BWAs. These should be implemented early (if a warning is received) or later (once suspicion of agent use is made). After the confirmation of diagnosis emergency medical treatment and decontamination are performed in rapid sequence. Patients are then evacuated and specific therapy is given according to the agent involved. Appropriate emergency department and hospital response could significantly limit the morbidity and mortality of BWA.

- *Classification of BWA:* The biological warfare agents can be classified as:[15]
  - Bacteria: Anthrax, Plague, Brucellosis, Cholera, Clostridium perf toxin, Staph enterotoxin B, Melioidosis, Tularemia
  - Virus: Congo Crimen Hemorrhagic Fever, Ebola, Hemorrhagic Fever, Small Pox, Rift Valley Fever, Venezuelan Equine Encephalitis
  - Fungus: Trichothecene Mycotoxin
  - Rickettsia: Q Fever
  - Miscellaneous: Saxitoxin (derived from paralytic shellfish), Ricin (cytotoxin derived from caster bean mesh)

- *Environmental Detection:* Only recently, detection systems for BWA has been introduced in a few countries, including India. Methods being developed and constantly updated are Biological Integrated Detection System (BIDS),[16] which is a multi-component system that provides monitoring, sampling detection and presumptive identification. BIDS is vehicle/helicopter (short- and long-range using UV and laser to scan area of interest to detect agents). These technologies use components that automatically determine the count/size of particle, determine if

particles are living organisms, classify some basic cell characteristics for identification. Portal Shield System and Joint Biological Point Detection system are also being developed which consists of network of biological and chemical point detectors, air sample device with audible alarms linked to computer/communication control systems.

- *Biotechnology and Biological warfare:*[17] Biotechnology harnesses cellular and biomolecular processes to develop technologies and products that help improve our lives and the health of our planet. The biological process of micro-organisms has been used for more than 6,000 years to make useful food products such as bread and cheese as also to preserve dairy products. The term was originally used to explain the commercial use of living organisms. However, with an increase in information on deoxyribonucleic acid (DNA) and with the creation of recombinant DNA technology, all activities associated with gene manipulations or genetic engineering have been included in the domains of biotechnology. Biotechnology apart from its use of healing the world, also enhances energy and food production. On the flip side, the progress of biotechnology has made BW more effective.[18] As genetic engineering can boost horizontal gene transfer which is to transfer genes to unrelated species, it may be used to create new pathogenic bacteria and antibiotic resistance among pathogens. According to WHO reports there are at least 30 new diseases including AIDS, Ebola and Hepatitis C which have emerged over the last 30 years. Genes for antibiotic resistance are also believed to have spread horizontally. Such microbes are the cause of concern because infections with these and other similar strains will not respond to known treatments and therefore accidental or intentional release of such genetically engineered organisms into the environment may be disastrous. The whole world is now aware of the dreaded mutations of the coronavirus, causing intense worry amongst governments, epidemiologists and biotechnologists.

Historical Background: Post-WW II & Instances of use of Biological Weapons

The history of biological weapons is difficult to assess because of a number of confounding factors. These include difficulties in verification of alleged or attempted biological attacks, the use of allegations of biological attacks for propaganda purposes, the paucity of pertinent microbiological or epidemiological data and the incidence of naturally occurring endemic or epidemic diseases during hostilities.[19]

Biological warfare is as old as civilisation. The history of warfare and the history of disease are unquestionably interwoven. Throughout the history of warfare, disease and non-battle injury have accounted for more deaths and loss of combat capability than from actual battle in war itself.[20] To cite few examples: Scythian archers are said to have infected their arrows by dipping them in decomposing bodies or in blood mixed with manure as far back as 400 BC; while in 190 BC, Hannibal is said to have won the battle of Eurymedan by firing earthen vessels full of venomous snakes into the enemy ships; in 18th century AD, British forces distributed smallpox infected blankets to native Americans to create transmission of disease.[21] While other examples include: Germans developing anthrax, glanders, cholera and a wheat fungus for use as biological weapons in the First World War; in 1940s and 1950s, the US and Britain continued research on various offensive biological weapons like anthrax and botulinum toxin and also continued to the 1960s; in 1970s, USSR and allies were suspected of having used yellow rain (trichothecene mycotoxins) during campaigns in Cambodia and Afghanistan, which caused alimentary toxic aleukia (ATA) in civilians.[22] Since the 1980s, terrorist organisations have become users of biological agents. The most frequent bioterrorism episodes have involved contamination of food and water. For example, in September 1984, international contamination of restaurant salad bars in Oregon by followers of Bhagwan Rajneesh infected 751 persons with Salmonella

typhimurium.[23] Recently, in a short span of time, that is from September to November 2001, 23 cases of bioterrorism occurred in the US which mostly involved, postal workers, where letters contaminated with anthrax were handled or opened.

China is so far the only nation (officially) whose people have suffered biological weapons attack attacks during the war, using plague, anthrax and syphilis. Prior to and during the Second World War, the Japanese Army established highly secret but extensive programmes of bacteriological warfare throughout China. The "secret of the secrets" in these "factories of death," such as the now-infamous Unit 731, was the barbaric experiments conducted by Japanese doctors and scientists upon thousands of living human beings, mostly Chinese nationals. In addition, biological weapons were deployed against both military and civilian targets in at least a dozen "large-scale field tests" throughout China. Hundreds of thousands of civilians died or suffered horribly from these human-made plagues.[24] After the Second World War, and with the Cold War looming, the US authorities made a secret deal with Japanese perpetrators, granting them immunity from war crimes prosecution. The purpose was to monopolize the scientific data gained through inhuman human experimentation so as to advance the United States' own BW programme.[25] While the Soviet Union tried to publicise internationally the overwhelming evidence from the Khabarovsk trial in the late 1940s, the public in the West was ignorant of Japan's BW crimes until the late 1980s or 1990s mainly because the U.S. authorities dismissed the trial as a "communist propaganda".[26] For the sake or in the name of national interest and national security, the US government trampled justice and morality underfoot and engaged in what the English common law tradition defines as 'complicity after the fact'. The US government has never issued a public statement on its cover-up of Japan's wartime medical atrocities, let alone a public apology.[27]

Protocols and Agreements: Failed Treaty?

In response to the horrors of the First World War, including the use of chemical weapons, the 1925 Geneva Protocol was created to ban the use of biological and chemical weapons,[28] currently signed by 65 of 121 states, which prohibits the development, production and use in war of biological and chemical weapons.

The WHO identified the threat of biological and chemical warfare officially in the midst of the Vietnam War and Cold War, after UN resolution 2162B (XXI) was adopted in 1967, condemning all actions contrary to the Geneva protocol. This resulted in 1970 WHO report 'Health aspects of Chemical and Biological weapons', updated in 2004 into WHO guidance 'Public health response to biological and chemical weapons'.[29] This WHO document focuses on detecting and responding to unusual disease outbreaks. Important recommendations are standardized surveillance and the provision of adequate healthcare in cases of such emergencies. In 1969, President Richard Nixon issued an executive order unilaterally and unconditionally ending America's bioweapons program, and all US stockpiles were destroyed by 1972 (not verified).

The Biological Weapons Convention:[30] The BWC formally known as "The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons (BCTW)" prohibits the development, production, acquisition, transfer, stockpiling and use of biological and toxin weapons. It is the first multilateral disarmament treaty banning an entire category of weapons of mass destruction (WMD). The BWC is a key element in the international community's efforts to address WMD proliferation and it has established a strong norm against biological weapons. The Convention has reached almost universal membership with 183 states-parties, including Palestine, and four signatories (Egypt, Haiti, Somalia, and Syria). Ten states have neither signed nor ratified the BWC (Chad, Comoros, Djibouti, Eritrea, Israel, Kiribati, Micronesia, Namibia, South Sudan and Tuvalu).

As widely acknowledged, the BWC, like many other international declarations and agreements, lacks compliance monitoring and verification mechanisms so that it is far from effective in controlling biological armament. Also, the convention does not specifically define which agents or toxins are prohibited, and what quantities would go beyond the justification. As on date, 16 countries plus Taiwan (which includes all five UNSC members) are currently suspected of having biological weapons programs: Canada, China, Cuba, France, Germany, Iran, Iraq, Israel, Japan, Libya, North Korea, Russia, South Africa, Syria, the United Kingdom and the United States.

Potent and Immediate Global Threat

The employment of BWA is not limited to war alone, but can occur at any time, at any place and by anyone. They can be employed as WMD. The use of BWA has far-reaching consequences and can result in fear and panic in a population, whether under attack or being threatened to gain political advantages in political activities. The stress associated with a biological attack could create high numbers of acute and potentially chronic psychiatric casualties.[31] Talking of potential threat, the most dreaded example is the great influenza pandemic during World War I that killed 20 million people or more worldwide in 1918.[32] Although this was a naturally occurring event, what if a country could create a biological agent that could yield the same catastrophic loss of life on the enemy? That, in essence, is the potential effect of applying genetic engineering for biological warfare or bioterrorism. In this century, it is widely predicted that advances in biology and biotechnology will revolutionize society and life as we know it. At the same time, the "black biology"[33] of biotechnology which can be used to create biological weapons, will be one of the gravest threats we will face. Black biology is a shadowy science in which microorganisms are genetically engineered for the sole purpose of creating novel weapons of terror. Biophysicist Steven Block a

professor of biological sciences and applied physics at Stanford says, "The idea that anybody can brew this stuff in their garage vastly overstates the case, but any technology that can be used to insert genes into DNA can be used for either good or bad".[34] When 'cloning' and 'designer genes' are routine buzzwords; in November 2018, Chinese scientist *He Jiankui* of the Southern University of Science and Technology in Shenzhen, China, declared that he used the gene-editing technique CRISPR-Cas9 to create genetically modified human babies,[35] anything is possible, and it is become increasingly difficult to discern fact from fiction.

- *Emerging Technologies and Governance Mechanisms:* Advances in three specific emerging technologies; additive manufacturing (AM) or 3D printing, artificial intelligence (AI), and robotics,[36] could facilitate, each in their own way, the development or production of biological weapons and their delivery systems. This could be by enabling the automation of developmental or production steps that previously required manual manipulation or analysis by a human. They could also provide new possibilities for BW use and increase the exposure of digitised biological data and operating parameters to cyberattacks. All three technologies are difficult to control, not least due to their dual-use nature, their digitisation, and the fact that they are mainly developed by the civilian and private sectors. However, the impact of these technologies on the engineering of biological weapons and their delivery systems should not be exaggerated, as the expertise required to exploit these technologies for the purpose of developing and producing biological weapons remains significant and continues to pose a barrier to most actors.

  What is indeed worrying is that nearly two dozen conventional biological agents including smallpox, anthrax, Ebola and typhus plus an unknown number of genetically engineered organisms are still maintained by many countries including the big three (US, Russia and China which though a late starter is a very quick learner)[37] and if falls

in wrong hands like terrorists, could be unleashed on an unsuspecting public and cause a global pandemic. We are still a long way from eradicating (if ever) the COVID-19 pandemic. The US and other developed countries should be doing more to prevent the spread of biological weaponry, which undoubtedly are a serious threat to peace in the twenty-first century.[38] Because of increasing technological innovation and sophistication of equipment, and the proliferation of knowledge through the internet across the world, equipment has become cheaper, smaller, and easier to operate, and methods have become easier to execute, bringing the focus to terrorist threat who certainly won't follow Geneva Convention or BWT. Driven by their hunger for power and dominion, states and terrorist groups may feel increasingly tempted to access and exercise such super-biological means of destruction. The spread of conspiracy theories reflects a series of longstanding and damaging trends in the geopolitical domain, which include deep mistrust, animosities, the power of ideologies such as nationalism, and the sacrifice of truth in propaganda campaigns. Alarmingly, the safety of the scientific laboratories where the most dangerous pathogens are researched (and sometimes created) has long been a sword of Damocles hanging over humankind.

- *COVID-19 and BW:* Two theories on the origins of COVID-19 have been widely circulating in China and the West respectively, one blaming the United States and the other a highest-level biocontainment laboratory in Wuhan, the initial epicentre of the pandemic. Both theories make claims of biological warfare attempts.[39] After reading numerous international articles including those emanating from the USA, according to the available scientific evidence, these claims are groundless. Yet, the fact that the virus is not human-made does not necessarily exclude the possibility that the virus escaped the lab by accident.[40] This remains an open question; without independent and transparent investigations, it may never be either proven or disproven.

India and BW

India has ratified the BTWC on 15 July 1974, and pledges to abide by its obligations. India has defensive BW capabilities and has conducted research on countering various diseases. India also has an extensive and advanced dual-use pharmaceutical industry. We live in a fairly volatile regional security environment, with disputed land borders, contiguous to a nation with known BW expertise and stocks which has a rogue nation as a client, which makes it imperative that we must stay ahead of the loop of BW and BT.

- *Capabilities and Potential:* New Delhi possesses the scientific capability and infrastructure to launch an offensive BW program, but does not appear to have chosen to do so.[41] In terms of delivery, India also possesses the capability to produce aerosols and has numerous potential delivery systems ranging from crop dusters to sophisticated ballistic missiles. However, no information exists in the public domain suggesting interest by the Indian government in delivery of biological agents by these or any other means.[42] India has sought to improve its capabilities in biotechnology, largely in a peaceful capacity, and has a well-developed biotechnology infrastructure that utilises well-trained scientists experienced with infectious diseases and numerous pharmaceutical production facilities and bio-containment laboratories (including labs at Biosafety Levels 3 and 4). In October 2002, then Indian President A.P.J. Abdul Kalam asserted that India "will not make biological weapons. It is cruel to human beings ...".[43] Some of India's facilities are dedicated to developing defensive measures to combat biological attacks, and these same facilities potentially could be repurposed to provide offensive agents as well. India's biodefense industry is centred at the Defence Research and Development Organisation (DRDO), and its primary lab, is located in Gwalior, Madhya Pradesh.[44] Studies in toxicology, biochemical pharmacology, and the development of antibodies against several bacterial and viral

agents are done. Additionally, the Indian government has established nuclear, biological, and chemical (NBC) warfare directorates in the armed services, as well as an inter-services coordination committee to monitor the programme. The Indian Army has further established an NBC cell at Army Headquarters to study the effects of NBC warfare. In 2003, the DRDO turned over India's first indigenously produced NBC reconnaissance vehicle to the Indian army. India has made substantial efforts to prepare its military force for a biological attack. However, representatives of the Indian Army's Medical Corps have publicly expressed reservations on the Indian hospitals preparation and adequacy to events arising from BW.[45] India's Central Industrial Security Force (CISF), originally established to defend heavy industry, transportation hubs, nuclear facilities and the like, has also developed the ability to deploy specially-trained first responders to the scene of a nuclear or biological attack.[46] In January 2003, the Indian government announced changes in India's nuclear use doctrine and stated that the new posture allows India to "retain the option of retaliating with nuclear weapons" in the event of a major biological or chemical attack against India or Indian forces anywhere.[47] India has stringent export control regulations outlined in the special chemicals, organisms, materials, equipment, and technologies (SCOMET) guidelines; India's national export product control list that identifies goods, technologies and services subject to dual-use licensing requirements.[48]

- *The Fight against Bioterrorism:* On 3 June 2015, India and the US signed a new 10-year defence framework agreement, which includes provisions to work cooperatively to develop defence capabilities, including "a lightweight protective suit effective in chemical and biological hazard environments".[49] The Indian government along with friendly nations need to pool their resources and make major investments in the R&D of state-of-the-art devices capable

of instantaneously detecting lethal bacteria and viruses in the environment.[50]

- *Setting up an Institutionalised National and Strategic Body:* Setting up a National and Strategic Body to monitor biological and chemical threats, carry out holistic defensive planning, preparation, procuring equipment, order raising suitable armed forces, paramilitary and NDRF (National Disaster Response Force) units/sub-units and personnel and training them is an absolute imperative in the immediate future. The newly raised SPG (Strategic Planning Group) headed by the NSA would be an appropriate body to oversee the functioning of this new organisation. The body can have a mixed composition of core experts, administrators and security forces representatives from all concerned departments/organisations including ministries and even industry. Execution can be appropriated to the concerned organisations and agencies.

Global Recommendations for Prevention of BW and BT

Governance of biosafety and biosecurity is long overdue. Such governance should include three key areas; an effective ban on offensive BW programmes; much-improved prevention and preparation for bioterrorism; and more transparency and surveillance of biological research labs (particularly P4 and P3 labs) in which scientists investigate the most dangerous pathogens such as the Ebola virus and the coronavirus. It is, therefore, absolutely necessary and urgent that the international community takes coordinated actions to prevent any human-made pandemic. Astoundingly, there is no international organisation, in the UN system or elsewhere, charged with overseeing biosafety and biosecurity at the global level.[51] Enhancing global oversight of biosafety and biosecurity needs new ethical vision. Any new structure must move beyond the sweeping ideologies like nationalism and the current practices dominated by secrecy, mistrust, and animosities. An 'each to his own' global response to COVID-19

shows how indispensable trust is for containing the pandemic, indeed, for any global public health effort, or for reaching a consensus on a more effective BWC. While it may appear unrealistic in this world of '*realpolitik'*, a framework based on ethical values of transparency, trust, and trustworthiness, and the common good of humanity, could well be the only answer. A combination of punitive and incentive-based effort built on human values, and surveillance (horrendous implications for the entire globe, hopefully will rein in rogue nations and terrorist groups), appears to be the way forward.

On 27 March 2020, India urged the comity of nations and the international community to ensure strict compliance of a global treaty banning production of entire range of biological weapons of mass destructions,[52] highlighting the need for effective response to the challenges posed by new scientific developments in the area. This fresh call to ban biological weapons was made on the occasion of 45th anniversary of the Biological and Toxin Weapons Convention (BTWC) coming into force. To which, India's Ministry of External Affairs also underlined the need for international cooperation on BW, including institutional strengthening of the WHO.

Conclusion

While conspiracy theories on the origins of COVID-19 are probably scientifically groundless, the fear behind them is not. The pandemic has woken up the world to the potent, live and real threat of BW. For the sake of humanity, developing a much more robust global governance of biosafety and biosecurity than currently exists at present is an urgent imperative for the international order. BT or BW is neither something new, nor something that is likely to go away. While the likelihood of a successful bioterrorist attack is not very large, given the technical difficulties and constraints resulting from the need to work in secret, and more probably at the low-technology end of the spectrum than the high-

technology end, however, even if the number of casualties is likely to be limited, the impact of a bioterrorist attack is high, will affect many lives, and is certainly to be costly in direct and indirect ways. Thus, it is best to be prepared to deal with the consequences. Moreover, low cost and easy access to genomic technologies make it feasible for such weapons to be deployed by almost any attacker. Even small alterations are sufficient to create hazardous effects. India is well-poised geo-politically today to lead the charge to ensure a more effective and punitive BCWT. Concurrently India needs to create a national set up to monitor and battle BW. Today the world is at crossroads. On the one hand, modern biology is so promising and curative, on the other immensely destructive. The First World War saw chemical; and the Second World War experienced the mass devastation of nuclear weapons. If mankind is not proactive we should be ready for the Third World War, which could well be 'Biological'.

Notes

1. Quoted in "Fact Sheet: Global Health Security", The White House, President Barack Obama, 22 September 2011. Available online at https://obamawhitehouse.archives.gov/the-press-office/2011/09/22/fact-sheet-global-health-security, accessed on February 24, 2021.
2. Sadanand Pandey (2019), "Are Biological Weapons More Dangerous Than Nuclear Weapons? What Is the Current State Of Biological Weapons Research?", ResearchGate, 21 January 2019. Available online at https://www.researchgate.net/post/Are_Biological_Weapons_More_Dangerous_Than_Nuclear_Weapons_What_Is_The_Current_State_Of_Biological_Weapons_Research, accessed on February 24, 2021.
3. See "Biological Weapons", World Health Organization. Available online at https://www.who.int/health-topics/biological-weapons#tab=tab_1, accessed on January 28, 2021.
4. HJ Jansen et al. (2014), "Biological warfare, bioterrorism, and biocrime", *Clin Microbiol Infect*, Vol. 20, No. 6, June 2014, pp. 488-496. Available online at https://www.sciencedirect.com/science/article/pii/S1198743X14641732, accessed on January 28, 2021.
5. Jim Monke (2007), "Agroterrorism: Threats and Preparedness", CRS Report for US Congress, Congressional Research Service, 12 March 2007. Available online at https://fas.org/sgp/crs/terror/RL32521.pdf, accessed on February 24, 2021.
6. See "Rinderpest", Science Direct. Available online at https://www.sciencedirect.com/topics/medicine-and-dentistry/rinderpest, accessed on February 21, 2021.

7. Newcastle disease (ND) is a highly contagious and often severe disease found worldwide that affects birds including domestic poultry. It is caused by a virus in the family of paramyxoviruses. See, World Organisation for Animal Health. Available online at https://www.oie.int/en/animal-health-in-the-world/animal-diseases/newcastle-disease/, accessed on February 21, 2021.
8. Mark Wheelis, et al. (2002), "Biological Attack on Agriculture: Low-Tech, High-Impact Bioterrorism", *Bioscience*, Vol. 52, No. 7, July 2002, pp. 569-576.
9. "The 2001 Outbreak of Foot and Mouth Disease", Report by the Comptroller and Auditor General, HC 939 Session 2001–2002, National Audit Office, London, UK, June 2002. Available online at https://www.nao.org.uk/wp-content/uploads/2002/06/0102939.pdf, accessed on January 15, 2021.
10. Ketra Schmitt and Nicholas A. Zacchiak (2012), "Total decontamination cost of the anthrax letter attacks", *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science,* Vol. 10, No. 1, pp. 98-107.
11. Genetic engineering is the process of using recombinant DNA (rDNA) technology to alter the genetic makeup of an organism. Traditionally, humans have manipulated genomes indirectly by controlling breeding and selecting offspring with desired traits. Genetic engineering involves the direct manipulation of one or more genes. Most often, a gene from another species is added to an organism's genome to give it a desired phenotype. For details see, National Human Genome Research Institute. Available online at https://www.genome.gov/genetics-glossary/Genetic-Engineering, accessed on February 5, 2021.
12. HJ Jansen, et al. (2014), "Biological warfare, bioterrorism, and biocrime", *Clin Microbiol Infect*, Vol 20, Issue 6, June 2014, pp. 488-496. As noted by Jansen, et al., in 1995, the Aum Shinrikyo sect disseminated sarin in a coordinated attack on five trains of the Tokyo metro system, in an effort to ultimately start an apocalyptic war, from which the sect was meant to emerge as rulers of Japan and possibly even the world. The attack resulted in 12 deaths and at least 1400 people being injured. An earlier attack in 1994, using sarin in Matsumoto, central Japan, resulted in seven deaths and 200 people being injured. At the time, the cult had several thousand members and assets worth millions of dollars, including a sheep farm in Australia for field testing. Its chemists were able to synthesise sarin and VS nerve agent gases, among other agents, by themselves. Only in 1998 did the authorities learn that the cult had previously tried to attack metropolitan Tokyo with anthrax spores or botulinum toxin on at least eight different occasions in the period 1990–1995. All of these attempts failed, owing to the use of non-pathogenic preparations and technical difficulties in creating an aerosol.
13. Ibid.
14. Reshma Agarwal, et al. (2004), "Biological Warfare -- An Emerging Threat', *Journal of the Association of Physicians of India (JAPI),* Vol. 52. Available online at https://www.japi.org/v2f4c4b4/biological-warfare-an-emerging-threat, accessed on January 31, 2021.
15. Ibid.
16. Ibid.

17. Major General PK Chakravorty (Retd) (2020), "Biotechnology and Biological Warfare – its Applicability to Indian Armed Forces", Vivekananda International Foundation, 27 April 2020. Available online at https://www.vifindia.org/2020/april/27/biotechnology-and-biological-warfare-its-applicability-to-indian-armed-forces%20, accessed on January 24, 2021.
18. Henry I. Miller (1999), "UN based biotechnology regulation: Scientific and Economic havoc for 21st century", *Biotopic*, Vol. 17, Issue 5, pp. 185-190.
19. Reshma Agarwal, et al. (2004), "Biological Warfare", n. 14.
20. Mark Shwartz (2001), "Biological Warfare: an Emerging threat in the 21st Century", Stanford News Service, 1 November 2001. Available online at https://news.stanford.edu/pr/01/bioterror117.html, accessed on February 20, 2021.
21. Reshma Agarwal, et al. (2004), "Biological Warfare", n. 14.
22. Ibid.
23. Ibid.
24. Yan-Jun Yang and Yue-Him Tam (2018), *Unit 731: Laboratory of the devil, Auschwitz of the East*, UK: Fonthill Media.
25. Jing-Bao Nie (2020), "In the Shadow of Biological Warfare: Conspiracy Theories on the Origins of COVID-19 and Enhancing Global Governance of Biosafety as a Matter of Urgency", *Bioethical Inquiry* , Vol. 17, pp. 567-574.
26. Jing-Bao Nie (2004), "The West's dismissal of the Khabarovsk trial: Ideology, evidence and international bioethics", *Journal of Bioethical Inquiry*, Vol. 1, No. 1, pp. 32–42.
27. Jing-Bao Nie (2020), "In the Shadow of Biological Warfare", n. 27.
28. HJ Jansen, at al. (2014), "Biological warfare, bioterrorism, and biocrime", n. 11.
29. "Public health response to biological and chemical weapons: WHO Guidance (2004)", World Health Organisation, 11 December 2019. Available online at https://www.who.int/publications/i/item/public-health-response-to-biological-and-chemical-weapons-who-guidance-(2004), accessed on February 23, 2021.
30. See "Biological Weapons Convention", United Nations Office for Disarmament Affairs. Available online at https://www.un.org/disarmament/biological-weapons/, accessed on February 23, 2021.
31. Reshma Agarwal et al. (2004), "Biological Warfare", n. 14.
32. Ibid.
33. Michael J. Ainscough (2002), "Next Generation Bioweapons: The Technology of Genetic Engineering Applied to Biowarfare and Bioterrorism", The Counterproliferation Papers Future Warfare Series No. 14, USAF Counterproliferation Center, Air War College, Air University, April 2002. Available online at Link- https://fas.org/irp/threat/cbw/nextgen.pdf, accessed on February 23, 2021.
34. Ibid.
35. David Cyranoski (2020), "What CRISPR-baby prison sentences mean for research", Nature, 3 January 2020. Available online at https://www.nature.com/articles/d41586-020-00001-y, accessed on February 23, 2021.

36. "How emerging technologies increase the threat from biological weapons", World Economic Forum, 27 March 2019. https://www.weforum.org/agenda/2019/03/how-emerging-technologies-increase-the-threat-from-biological-weapons/, accessed on February 18, 2021.
37. Sandeep Dhawan (2020), "Bioweapons and a Very Scary Future", eSamskriti, 16 September 2020. Available online at https://www.esamskriti.com/e/National-Affairs/Foreign-Affairs/BIOWEAPONS-and-a-Very-SCARY-Future-1.aspx, accessed February 20, 2021.
38. Mark Shwartz, "Biological Warfare", n. 20.
39. Jing-Bao Nie (2020), "In the Shadow of Biological Warfare", n. 27.
40. Matt Field (2020), "Experts know the new coronavirus is not a bioweapon. They disagree on whether it could have leaked from a research lab", Bulletin of the Atomic Scientists, 30 March 2020. Available online at https://thebulletin.org/2020/03/experts-know-the-new-coronavirus-is-not-a-bioweapon-they-disagree-on-whether-it-could-have-leaked-from-a-research-lab/, accessed on February 17, 2021.
41. See "Biological" (India), Nuclear Threat Initiative. Available online at https://www.nti.org/learn/countries/india/biological/, accessed on February 15, 2021.
42. Ibid.
43. Ibid.
44. Ibid.
45. Ibid.
46. Ibid.
47. Ibid.
48. Ibid.
49. Jim Garamone (2015), "U.S., India Sign 10-Year Defense Framework Agreement," U. S. Department of Defense, 4 June 2015. Available online at https://www.defense.gov/Explore/News/Article/Article/604775/, accessed on January 28, 2021.
50. "Beyond Coronavirus: Why India needs to be prepared for Bioterrorism", *Financial Express*, 16 March 2020. Available online at https://www.financialexpress.com/defence/beyond-coronavirus-why-india-needs-to-be-prepared-for-bioterrorism/1899820/, accessed on February 3, 2021.
51. Zhou Dongsheng, et al. (2019), "Biosafety and biosecurity", *Journal of Biosafety and Biosecurity*, Vol. 1, Issue 1, March 2019, pp. 15-18.
52. "Ensure strict compliance of treaty on banning biological weapons: India"; 27 March 2020, *The Economic Times*, Available online at https://economictimes.indiatimes.com/news/defence/ensure-strict-compliance-of-treaty-on-banning-biological-weapons-india/articleshow/74852870.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst, accessed on February 20, 2021.

The Future of Artillery in 21st Century Warfare

P. K. Chakravorty

Abstract

The article visualises the future of Artillery in the 21st century. It brings out the requirement of Artillery in the nine conflicts till date in the 21st Century. It is observed that Artillery is required to perform three primary tasks: First, Surveillance and Target Acquisition; second, engagement of targets; and third, post-strike damage assessment. The future battle space would be non-linear with the need for simultaneous engagement in the close, intermediate and depth areas. Based on these aspects, one arrives at the future profile of Artillery and the equipment needed for the task. This results in the type of regiments and their equipment in the Indian context. The Surveillance and Target Acquisition (SATA) Regiments, Gun Regiments, Mortar Regiments, Rocket Regiments and BrahMos supersonic Cruise Missile Regiments would compose the future set up of Artillery. In view of this, the paper will discuss, ammunition, the weapon of the Artillery; and the aspects of Precision Guided Munitions, Loitering Munitions as also the Long Range ammunition being developed by BAE System and Lockheed Martin.

Introduction

Does Artillery have a place in the conflicts which have occurred in the 21st century? One-fifth of the 21st century has elapsed and despite the end of the

Major General **P. K. Chakravorty** (Retd) is Senior Fellow (Veteran) at Centre for Land Warfare Studies.

Cold War, military conflicts have continued. Political theorist like Francis Fukuyama who called it the 'end of history'—a triumph of capitalist, and liberal Western democracy over other forms of political ideologies. It was anticipated that the world would be moving towards collective prosperity and peace. The attacks on 11 September 2001, commonly referred to as the 9/11 attacks, profoundly challenged the theory. However, it is pertinent to note that open conventional warfare between nation-states became increasingly rare in the years subsequent to the Cold War. This has been replaced by terrorism, ethnic conflict, civil wars, hybrid warfare and special operations accounted for a large portion of non-state, intrastate and interstate conflicts.[1] In this context, the future of Artillery will be based on the role the Arm is likely to play in conflicts of this century.

The conflicts of the 21st century which have occurred so far will provide inputs on the use of Artillery. These are elucidated below:

- *Second Congo War (1998-2003):* This conflict began in the last years of the 20th century. The conflict occurred due to the Rwandan genocide and the ethnic strife between Hutu and Tutsi tribes. The Eastern part of the Democratic Republic of Congo became a deeply contested battlefield between Armies of nine countries. Though many of these countries have artillery weapons, the contests were primarily confined to Small Arms.
- *Syrian Civil War:* The genesis of the Civil War lay in the forces trying to topple Syrian President Bashar al-Assad. He responded to protests with a combination of political concessions and escalating violence against his own people. This led to a civil war which spread into neighbouring Iraq and led to the creation of the armed group, the Islamic State of Iraq and Syria (ISIS). The rebel groups occupied a large amount of territory and the Syrian Government was left with a small portion of the country. Accordingly, Assad dropped crude barrel bombs, used chemical weapons on territory occupied by the rebels. Kurdish militias advanced from the Kurdish autonomous region in

Northern Iraq. The United States (US) conducted air strikes against ISIS forces which were located in Syria and Iraq. Russia joined the conflict in 2015 in support of President Assad. This reversed the tide of the War. Iran also started supporting Assad. The war saw intense use of fire power which was delivered from the Air, with Artillery and drones Artillery having their place in battle.

- *Darfur Conflict:* The beginning of 2003 witnessed rebels taking up arms against the Sudanese President, igniting long-standing tensions in Darfur region of Western Sudan. The conflict erupted into what the US Government later described as the first genocide of the 21st century. It is estimated that 300,000 people were killed and mainly by chemical weapons. The Sudanese Army has Artillery which is of Russian origin and the same was possibly used to fire smoke shells and other varieties containing chemicals. To note, Artillery is an extremely effective delivery system for chemical and biological warfare.
- *Iraq War:* Operation Iraqi Freedom was launched by the United States along with a coalition of the willing to dislodge President Saddam Hussein on 20 March 2003. Artillery was used immensely by both sides and it led to increasing use of Precision Guided Munitions. Subsequent operations against ISIS involved limited use of artillery as ISIS had a few weapons and used them sparingly.
- *Conflict in Afghanistan:* The conflict began post-September 2001 against the Taliban who were overthrown in December 2001. Ever since terrorist operations continue in Afghanistan. Artillery in combination with Unmanned Combat Aerial Vehicles (UCAVs) and other aerial fire power means have been sporadically used in the country. The focus has been on usage of fewer guns and with greater accuracy.
- *Conflict against Boko Haram:* A group is an Islamic group which came into prominence in 2009. The goal is to impose Islamic law in Nigeria. From 2010, Boko Haram attacked numerous police stations

and civilian targets across Nigeria. 300 schoolgirls were kidnapped in 2014 and the group began to assert more control over territory in North-East Nigeria. The terrorist campaign turned to a full-blown insurgency and troops from Cameroon, Chad, Benin and Niger eventually joined the military response. It is estimated that limited artillery has been used as also drones were operated from Chad against Boko Haram.

- *Civil War in Yemen:* Houthi rebels in Yemen captured the capital Sanaa and a civil war has broken out between Houthi supported by Iran and the rulers supported by Saudi Arabia. Bombings of Houthi has been regular and drones have been used by both sides. The Southern Transitional Council has been fighting the rebels.[2] The countries involved are Saudi Arabia and the United Arab Emirates (UAE) versus Houthi possibly backed by Iran. Possibly artillery has been used in conjunction with bombings.
- *Ukraine Conflict:* The crisis is a struggle between factions who want to align with the European Union and the other with Russia. Russia craftily used the opportunity to occupy Crimean peninsula in 2014.[3] This has been followed by sporadic attacks by rebels duly supported by Russia mainly in regions of Eastern Ukraine. Limited Artillery was possibly used in the conflict.
- *Nagorno-Karabakh Conflict:* The conflict lasted from 27 September to 9 November 2020. Armenia and Azerbaijan used all weapons which form a part of the conventional set up including Artillery. Turkey supported Azerbaijan and equipped them with sensors and drones which were extensively used and made them the decisive victor in the conflict. Drones carried out destruction of armour, air defence systems, guns and paved the way for successful culmination of operations. The implications of the 44 days conflict have spurred a lot of discussions on the character of modern warfare.[4] These cases highlight the changing contours of conflict in the 21st century.

Battlespace for Artillery of 21st Century

As can be observed, Artillery remains an important operational arm for conflicts in the 21st century. Ammunition is the weapon of the artillery. The Gun, Rocket, Missile and Drones are delivery means for this weapon. To this, the other aspect that needs due consideration is the perceived battlespace for the future. Wherein, the Artillery of the 21st century will be dictated by these aspects, which are as follows:

- *Non-Linearity:* It entails that the entire battlespace will be utilised for operations.
- *Speed*: Speed would be the essence of future operations.
- *Homogenisation:* There would be a requirement of complete homogenisation within the battlespace. Homogeneity combined with integration between land assets would be a prerequisite for successful operations. This aspect would entail the need for interoperability as also civil-military cooperation at all levels. Non-military personnel, government and non-governmental agencies will have an impact on modern-day battlespace which will increase with the passage of time.
- *Continuity:* Operations would be 24 hours nonstop and would be facilitated by technology to moderate the adverse effects of terrain and weather.
- *Connectivity:* This would ensure real-time connection of sensor and shooter as also post-strike damage assessment. These are extremely important from the Artillery point of view.
- *Synchronisation:* The close, rear and the depth battles will be fought simultaneously and synchronised to produce a devastating effect. Guns, Rockets, Missiles and Drones would be instrumental in ensuring this synchronisation.
- *Perception management:* In the current century, the management of perception has become extremely important. Artillery has the capability to fire propaganda shells, containing leaflets with imaginative material

to influence the perception of people where it lands. This would be extremely effective particularly in insurgent situations.

- *Deception:* This is extremely important for conflicts in the 21st century. Artillery is an extremely good means which can deceive the enemy by deployment, movement of ammunition, engaging objectives not to be addressed and by radio transmissions with regard to command and control of artillery.[5]

All these aspects become applicable to the future of Artillery in the current century. An analysis of recent conflicts reveal the ever-changing nature of hybrid engagements, the uneasiness of being in a perpetual operational situation without clearly realising when it begins, pauses and continued very much akin to the Harassing Fire of Artillery. In February 2021, at *Divya-Drishti*, an international seminar organised by Centre for Land Warfare Studies on the theme "Multi-Domain Operations",[6] the domains were mainly identified to be: land, sea (surface and sub surface), air, space, cyber and electro magnetic spectrum (some panellists also included cognitive domain to the list). In all these domains, the tasks of Artillery stand out, which pertain to—Surveillance, Intelligence, Engagement of Targets and Post Strike Damage Assessment.

While looking at issues globally it is important to view the possible conflict scenarios in the Indian context. The perspective could be limited to 15 years. These are as listed below:

- Hybrid conflict and also the possibility of a conventional war with China in a nuclear backdrop.
- Limited or conventional conflict with Pakistan with a nuclear overhang.
- Assistance to Indian Ocean Littoral States.
- Terrorism oriented threats in Kashmir, North East and Hinterland.
- Internal unrest due to growth of religious fundamentalism, socio and political inequalities.

- Terrorist groups acquiring Weapons of Mass Destruction (WMD).
- Refugee pressures impacting security.
- The problem of porous skies and waters.[7]

It is pertinent to note that tasks of Artillery comprising surveillance, intelligence, engagement of targets and post-strike damage assessment enable it to be a participant in all scenarios. The future of Artillery for the current century would be based on all these aspects.

Future Profile

General JFC Fuller had stated that, "Artillery Conquers and Infantry Occupies",[8] Artillery comprises of Surveillance and Targets Acquisition Equipment, Guns, Mortars, Rockets and Missiles. Gathering intelligence through surveillance, weaponry is tasked to destroy/neutralise/suppress the enemy by synergised application of all fire assets at selected points of decision to physically and psychologically degrade enemy's cohesion with the ultimate aim of breaking his will to fight. Artillery can attack operational centres of gravity to pulverise the objective. To undertake this task for the 21st century, the artillery profile would be based on SATA Regiments, Regiments equipped with Guns (based on the role, some would be Self Propelled), Regiments equipped with Mortar, Regiments equipped with Rockets and regiments equipped with missiles. The profile would be based on the terrain and it should be practicable to have equipment which is as far as possible applicable in all operational areas in our country. The profile would be based on SATA Regiments, Gun Regiments, Mortar Regiments, Rocket Regiments and Missile Regiments. It is pertinent to outline the equipment in these categories of Regiments.[9]

Futuristic Equipment in the Artillery Regiments

- *SATA Regiments:* SATA Regiments would be needed in all types of terrain. Surveillance forms a major component for direction of

Artillery fire. The surveillance philosophy of the Indian Army would guide the future sensor profile of the Indian Army. It is obvious that it will focus on the complete battlespace coverage in real-time. SATA Regiment would be the eyes and ears of the Indian Army. The equipment with the SATA Regiment would include the following:

- Image downloading equipment from Low Earth Surveillance Stations. This would enable real-time intelligence from these satellites, which would enable inputs for taking decisions in real-time thereby ensuring instantaneous action against targets deserving punishment.
- *Drones:* The Regiments must be equipped with UCAVs. These would be capable of providing surveillance, reconnaissance and engagement of targets. Based on the requirement of a swarm of mini Unmanned Aerial Vehicles (UAVs) in the current situation it would be prudent to modify the Herons to become UCAV. Further, there is also a need to get an adequate amount of the contracted Guardian UCAV which is of the Predator variety. Frameworks should be made to have these made in India, as the swarm variety capability exists within the country.
- *Battlefield Surveillance Radar:* These would be of three types, Short-range, Medium Range and Long Range. These would help in the detection of vehicles and personnel.
- *Aerostats:* These with radars mounted on them would provide in-depth view of enemy's vehicle and personnel. They would be useful in providing data particularly in the plains and the desert sector. These could be developed indigenously as the Air Force already possess them and are looking for indigenous surveillance equipment.[10]
- *Weapon Locating Radars:* Two Weapon Locating Radars have entered our organisation. The ANTPQ-37 which was procured under the Foreign Military Sales programme from

the United States. Currently, the Artillery is being equipped with the Bharat Electronics, Swathi Weapon Locating Radar. The radar is similar to the ANTPQ-37 and has capability of locating Guns at a range from 2 to 30 km, Rockets at a range of 4-40 km, Mortars ranging from 2 to 20 km. The initial order was for 32 and in August 2020 orders were placed for six radars.[11] The radars are not suitable for High Altitude and there is a need for developing a radar which can track Artillery shells in steep mountainous terrain. The Arthur Weapon Locating Radar manufactured by Saab Sweden has been exported to 12 countries.[12] Saab has been assisting India and it would be prudent to develop radar for High Altitude with their assistance. It is pertinent to note that four radars have been exported to Armenia by Bharat Electronics.

- *Sound Ranging System:* This is a passive system of locating artillery shells. Despite efforts, no system met the qualitative requirements of the Indian Army. No Original Equipment Manufacturer could meet the terms and therefore there is a need for us to try and develop the system for the plains.
- *Long Range Reconnaissance and Observation System (LORROS):* The device has been in use in the Indian Army for almost two decades. There is a requirement of developing a better system with a greater range and a more powerful image.

- *Gun Regiments:* The Gun Regiments of the Future Artillery would be based on the 155 mm Gun. It has varying barrel lengths which could be 39 calibres, 45 calibres and 52 calibres. All these could be grouped in varieties as listed below. In addition, there would be a few Regiments, holding Field equipment till they are replaced by the 155 mm Regiments equipped with the 105 mm Light Field Gun:

- *155 mm (52 calibre) Towed Regiment:* These would replace the existing Field regiments and would be equipped with Israeli ATHOS manufactured by Elbit Systems and the indigenously designed Advanced Towed Artillery Gun System (ATAGS). These Guns would be ranging 48 km at Mean Sea level. They would be inducted possibly by the end of 2021 or early 2022.
- *155 mm (45 calibre) Dhanush:* These are manufactured by the Ordnance Factory Board (OFB) and would constitute a fair number with a range of 38 km. A regiment is already inducted and there are a fair number in the pipeline.
- *155 mm (45 calibre) Soltam:* These are manufactured by OFB and constitute a range of about 38 km. They have been inducted and are operational.
- *155 mm (52 calibre) Self Propelled K-9 Vajra:* This is a tracked Self Propelled Gun with a range of 48 km. These would be employed in desert terrain with mechanised forces.
- *155 mm (45 calibre) Sharang Gun:* This is similar to the Soltam except the barrel is manufactured by OFB. The first regiment will be inducted this year and would upgrade the existing 130 mm Regiments to 155 mm.
- *155 mm (39 calibre) Ultra-Light Howitzer:* This Gun has been inducted and has a range of 30 km. The Gun is extremely light and can be lifted by a Chinook Helicopter.
- *155 mm (52 calibre) Mounted Gun:* The process for acquisition of this system was revalidated in 2018[13] and should have crossed the Request for Proposal stage. However, progress on the subject is not known. The Gun is mounted on a wheeled vehicle and is an important equipment as it would provide mobility since no towing is involved. This would be ideal for movement as the turning radius would be reduced.

- *155 mm (39 calibre) Bofors Gun:* The current Gun is in service for the last three and half decades. The Gun has a range of 30 km. To extend its life by another 15 years the equipment needs an upgrade particularly with regard to its Auxiliary Propulsion Unit its carriage and Sighting System. This is within the capability of OFB and the Army Design Bureau.
- *Other Equipment:* While the Guns are getting inducted we will have to continue with the existing 105 mm Light Field Gun and 130 mm Medium Regiments.

- *Mortar Regiments:* The Indian Army has been continuing with the 120 mm Brandt Mortar which has stood us in good stead for more than five decades. There is a requirement of a modern Mortar with a greater range possibly around 12 km and where required mounted on an Armoured Personnel Carrier. This weapon will be needed due to its ability to engage reverse slopes accurately and its importance will remain in the 21st century.
- *Rocket Regiments:* Rockets are capable of producing shock action which makes them relevant for conflicts in the current century. Broadly, there are three types of Rocket regiments which would be useful as enumerated below:
  - *Upgraded GRAD BM 21 Rocket Regiments:* The System has got a new lease after the latest up-gradation. The Ural vehicle has been replaced by Ashok Leyland and we have new Extended Range ammunition which ranges up to 40 km which is double the existing range. This ammunition is categorised as 122 mm 9 M521 Rocket.[14]
  - *Smerch Regiments:* These units are equipped with BM 30 Smerch (Tornado) which is a heavy multiple Rocket Launcher. It has a maximum range of 90 km and has been used by Syrian military

forces against rebels during the civil war in 2014. It was also used by Russia backed militants to deliver explosive and cluster munitions against Ukrainian military positions and in the War in Donbass. The Russian Ground Forces used the BM-30 in Syria during the Russian intervention in Syria.[15] During the 2020 Nagorno-Karabakh conflict Armenia and Azerbaijan both targeted each other with Smerch Rockets.[16] The weapon in its current form is suitable for plains. Using a smaller variant would see the equipment reach the mountains with a reduced number of tubes. This could be done indigenously with assistance from Russia.

- *Pinaka Regiments:* Pinaka Multiple Rocket Launcher System has been developed by DRDO and manufactured by Tata Power and L&T. The system has a maximum range of 40 km for Mark-I and 75 km for Mk-II and has 12 barrels on each launcher. A salvo can be fired in 44 seconds.[17] Currently, there are seven Regiments. Six additional Pinaka regiments have been contracted and these will be operationalised along the Northern and Eastern Borders. The induction is planned to be completed by 2024.[18] There is a need to complete the development of the incendiary shell of Pinaka which will pay rich dividends in operations.

- *BrahMos Regiments:* BrahMos is a Super Sonic Cruise Missile currently has a range of 290 km but has been successfully tested for 400 km. A hypersonic version of the missile which flies at five times the speed of sound is also being developed. Sources indicate that the aim is to test an 800 km BrahMos missile within a year. Further sources also report that the range is ultimately to be enhanced to 1500 km.[19]
- *Other Futuristic Guns:* Broadly two equipment need to be noted. The Rail Gun a prototype of which was made by DRDO in November 2017. An electromagnetic Gun which needs electrical power to fire a shell at extremely high velocity. There is no requirement of Charges as the same

is caused by electromagnetic induction. The initial test comprised a 12 mm square bore electromagnetic device. Currently, the aim is to fire a one-kilogram projectile at a velocity of more than 2000 metres per second using a capacitor bank of 10 joules. The development of the next Gun would be 30 mm square and would enable engagements at high speeds.[20] The other equipment is the use of a laser as a weapon. This would need high power and be suitable against the line of sight targets.

Ammunition Aspects

Ammunition is the weapon of the Artillery. A Precision Guided Munition (PGM) is a missile, bomb or artillery shell equipped with a terminal guidance system. It contains electrical equipment that guides it in the final phase before impact. PGMs are the most important development of the 20th century. They saw their initial usage during the Vietnam War when the Thanh Hoa Bridge was knocked down by the bombers using Laser Guided Bombs from the US Air Force. The percentages of PGMs used in various conflicts are (a) Vietnam 0.2 per cent, (b) First Gulf War 8 per cent, (c) Op Allied Force 35 per cent, and (d) Second Gulf War, Afghanistan and Libya 56 per cent.

The US has taken a decision that 50 per cent of all its ammunition holdings would be PGMs. This would overall optimise ammunition holdings and improve destruction of pinpoint targets. This has been vindicated by the success of PGMs which has increased from 90 per cent during the First Gulf War to the current rate of 95 per cent. The weapons could be in the form of a PGM which has a Global Positioning System with Inertial Navigation System in loop or an inexpensive system which could have a Precision Guidance Kit which has an inertial guidance kit fitted on the nose of the shell and produces an accuracy of less than 30 metres. The PGMs like Excalibur has an accuracy of 5 metres and missiles like the Hell fire and other Unmanned Combat Aerial Vehicles have pinpoint accuracy.

The other weapon is the Loitering Missile which is capable of loitering over the target and engaging with pinpoint accuracy. It is reported that Israel has Delilah and other variants. The other Companies who manufacture this variant are MBDA of Europe and Lockheed Martin of the United States. This is certainly a force multiplier for any Army in the World, particularly in a Counter Insurgency environment. PGMs and the Loitering missile must be acquired on priority and later the technology could be shared and these could be Made in India. This must be obtained by the fast track procedure using a co-development model. At least 10 per cent of the Indian Army's ammunition must be PGMs. Where required propaganda shells may be used for distribution of leaflets.

The 155 mm Long Range Land Attack projectile being developed by Lockheed Martin and BAE system for the US Navy ranging more than 100 km must be developed to achieve higher ranges for our Gun Systems.[21] The other aspect would be the use of Directed Energy as ammunition which is being undertaken by DRDO. Issues will fructify in a few years from now.[22]

Conclusion

Artillery as an arm will remain a potent Arm for the 21st century. It would need to modernise and improve its ability to provide intelligence, engagement of targets and post-strike damage assessment. It has its role in the Hybrid scenario of the current method of fighting and remains a dominant arm of the Indian Army.

Notes

1. Michael Ray, "8 deadliest Wars of the 21st century", Britannica. Available online at, https://www.britannica.com/list/8-deadliest-wars-of-the-21st-century, accessed on February 2, 2021.
2. "World Report 2020: Yemen", Human Rights Watch. Available online at https://www.hrw.org/world-report/2020/country-chapters/yemen#, accessed on February 9, 2021.
3. Kimberly Amadeo (2020), "Ukraine Crisis: Summary, Explanation, Causes, Impact", The Balance, 21 August 2020.

4. Michael Kofman (2020), "A Look at the Military Lessons of the Nagorno- Karabakh Conflict", *The Moscow Times*, 21 December 2020, Available online at https://www.themoscowtimes.com/2020/12/21/a-look-at-the-military-lessons-of-the-nagorno-karabakh-conflict-a72424, accessed on February 9, 2021.
5. Rajeev Kapoor (2020), "Emanating Land Warfare in the 21st Century", in P. K. Chakravorty (ed.) *Future of Land Warfare Beyond the Horizon*, New Delhi: Pentagon Press, New Delhi, pp 36-37.
6. "Indian Army Brainstorms Multi-Domain Operations and Future of Conflicts", Aviation & Defence Universe, 11 February 2021. Available online at https://www.aviation-defence-universe.com/indian-army-brainstorms-multi-domain-operations-future-of-conflicts/, accessed on February 13, 2021.
7. Puneet Doval (2020), "Future Conflicts in the Indian Subcontinent", in P. K. Chakravorty (ed.) *Future of Land Warfare Beyond the Horizon*, New Delhi: Pentagon Press, New Delhi, p. 50.
8. See, "Artillery Quotes", Military Quotes. Available online at https://www.military-quotes.com/artillery-quotes.htm, accessed on February 14, 2021.
9. Major General P. K. Chakravorty (Retd) (2017), "Weapons and Missiles in the Indian Environment", Occasional Paper, Vivekananda International Foundation, September 2017, p. 68. Available online at https://www.vifindia.org/sites/default/files/weapons-and-missiles-in-the-indian-environment.pdf, accessed on February 14, 2021.
10. Vijay Mohan (2021), "IAF mulls indigenizing surveillance equipment for its imported aerostats", *The Tribune*, 16 February 2021. Available online at https://www.tribuneindia.com/news/nation/iaf-mulls-indigenising-surveillance-equipment-for-its-imported-aerostats-193551, accessed on February 16, 2021.
11. "Indian Army to buy 6 indigenous weapon locating Swathi radars for over Rs 400 crores", *Mint*, 10 August 2020. Available online at https://www.livemint.com/news/india/indian-army-to-buy-6-indigenous-weapon-locating-swathi-radars-for-over-rs-400cr-11597070967072.html, accessed on February 18, 2021.
12. Christopher F Foss (2019), "Saab continues to invest in ARTHUR", Jane's, 10 July 2019, Available online at https://www.janes.com/defence-news/news-detail/saab-continues-to-invest-in-arthur, accessed on February 18, 2021.
13. Shaurya Karanbir Gurung (2018), "Army moving towards procuring mounted gun system trying to revalidate project", *The Economic Times*, 14 May 2018. Available online at https://economictimes.indiatimes.com/news/defence/army-moving-towards-procuring-mounted-gun-system-trying-to-revalidate-project/articleshow/64164074.cms?from=mdr, accessed on February 19, 2021.
14. "122 mm BM-21 Multi Barrel Rocket Launcher", GICHD. Available online at http://characterisationexplosiveweapons.org/studies/annex-a-122-mm-mbrl/#article-2, accessed on February 19, 2021.
15. Luis Martinez (2015), "Russian Troops Fire Artillery and Rockets in Syria", ABC News, 8 October 2015. Available online at https://abcnews.go.com/Politics/russian-troops-fire-artillery-rockets-syria/story?id=34322668, accessed on February 20, 2021.

16. Andrew E Kramer (2020), "Then I Heard a Boom: Heavy Weapons take toll of civilians in Armenia-Azerbaijan clash", *The New York Times*, 5 October 2020. Available online at https://www.nytimes.com/2020/10/05/world/europe/armenia-azerbaijan-nagorno-karabakh.html, accessed on February 20, 2021.
17. Sushant Kulkarni (2020), "Explained: The Pinaka Missile system that will be deployed at India's borders with Pakistan, China", 6 September 2020. Available online at https://indianexpress.com/article/explained/pinaka-rocket-system-acquisition-features-capabilities-origin-6578723/, accessed on February 20, 2021.
18. "Tata Group, L&T to build six Pinaka rocket regiments for Army", *The Hindu*, 31 August 2020. Available online at https://www.thehindu.com/news/national/tata-group-lt-to-build-six-pinaka-rocket-regiments-for-army/article32488946.ece, accessed on February 20, 2021.
19. Snehesh Alex Philip (2020), "India now working on 1500 Km range BrahMos supersonic cruise missile", The Print. Available online at https://theprint.in/defence/india-now-working-on-1500-km-range-brahmos-supersonic-cruise-missile/550924/, accessed on February 20, 2021.
20. "India successfully tests futuristic electromagnetic rail guns capable of firing at Mach 6", India.com, 8 November 2017. Available online at https://www.india.com/news/india/india-successfully-tests-futuristic-electromagnetic-railguns-capable-of-firing-at-mach-6-2612719/, accessed on February 20, 2021
21. "155 mm/62 (6.1") Mark 51 Advanced Gun System (AGS)", NavWeaps. Available online at http://www.navweaps.com/Weapons/WNUS_61-62_ags.php, accessed on February 21, 2021.
22. Amitav Malik (2004), "Directed Energy Weapons", *U.S.I. Journal*, Vol. CXXXIV, January-March 2004.

Non-Contact Warfare: Lessons from the US National Defence Strategy

Vivek Verma

Abstract

The 2018 National Defence Strategy (NDS) unveiled by the Pentagon can be encapsulated in three words 'compete, deter and win'. Key questions that arise are: What does it mean and how it gets manifested? NDS as the capstone document has been guiding the geopolitical discourse and global security developments. The Pentagon's efforts to redraw its dominance strategy and course correct its two decades of distraction due to endless wars in Afghanistan and West Asia have already manifested in Sino-US relations. A decade of 'pivot to Asia' policy put in place by Obama's administration gathered storm during Trump's tenure. 2018 NDS declared China and Russia as a strategic competitor. Washington's assertion of widening the competitive space is based on the premise of seamlessly integrating the US "multiple elements of national power—diplomacy, information, economics, finance, intelligence, law enforcement, and military".[1] *A closer examination of how the game gets played by the various national power elements under the new Biden administration will determine future policy directions against China and Russia. The lessons for India are ominous as it helps it to navigate the geo-strategic labyrinth.*

Brigadier **Vivek Verma** is Senior Research Fellow at The United Services Institution of India, New Delhi. He was the former Deputy Director, Centre for Land Warfare Studies.

Introduction

The glossary of military terms used by the US Armed Forces may not contain the term 'Non-Contact warfare'. However, the US strategic discourse reveals its practice. Non-contact warfare is defined as the form of warfare "in which states seek to employ all elements of national power […] to leverage their influence across multiple domains to target adversary's population, sovereignty, governance structures and economy through non-military or military non-kinetic and kinetic means".[2] The intention is to intimidate, paralyse or denude politico-military response while enabling winning without fighting or fight with minimum use of physical contact of own forces. Hence, its manifestation is across traditional military operations-across land, maritime, and air, supported by space and cyberspace and non-traditional fields including civilian affairs. Thus, non-contact warfare looks at a complete spectrum of warfare short of war waged by the civil-military combine.

The conflict is likely to be primarily played in the non-military domain, escalating into military domains. Within the military domain, it can be non-lethal or lethal and kinetic or non-kinetic. The intent is to "keep the response measured and calibrated along the desired escalation matrix to remain ahead in the game of domination".[3] Therefore, winning along each escalation ladder is more important than victory. It allows favourable outcomes without ratcheting up the violence in the ever-increasing lethal and complex warfare environment of the 21st Century.

The complex and contested global operating environment coupled with rapid dispersion and evolution of technologies and the new concept of warfare has prompted the Pentagon to articulate the 2018 NDS. The document steers the US long-term strategic approach. It aims to create a combat-credible military force capable of deterring war. It is nothing but the manifestation of non-contact warfare both in military and non-military domains.

The US Strategic Approach

American analysts believe that the past two decades have been a decade of distraction for the US due to its involvement in an endless war in Afghanistan and West Asia. They view the 2018 NDS as a course correction. Former Secretary of Defence General Mattis, assertion to guide American and allied forces to regain their lost edge over China has been the founding framework of this document. The intention to "compete, deter and win" is directed against China, Russia, North Korea, Iran and global terrorist organisations. However, China is the primary strategic competitor, followed by Russia. Pentagon believes that the Chinese actions against the Indo-Pacific region countries aim to gain regional hegemony in Indo-Pacific in the near term and ultimately achieve global pre-eminence.[4] Hence, the 2019 US' Indo-Pacific Strategy' aims to contain Beijing's predatory policies. Over the past three years, Washington has fast-paced policies, strategies and acts by publishing documents like National Security Strategy (2017), National Defence Strategy (2018), Nuclear Posture Review (2018), Missile Defence Review (2019), Taiwan Allies International Protection and Enhancement Initiative (TAIPEI) Act (2019) and Hong Kong Human Rights and Democracy Act (2019). It wishes to regain the lost strategic space ceded to China and Russia. The death of more than five hundred thousand US citizen to COVID-19 has already resulted in the ouster of President Trump. The new Biden administration may find it difficult to ignore the scars left over by the 'Chinese Virus'.

The US, Russia and China seem to be locked in long-term strategic friction in an ever-evolving competitive security environment.[5] As part of the great power rivalry, Washington feels it can expand the competitive space and seize the initiative to challenge the competitors where they lack strength. It is working on long-term strategic competition with "seamless integration of multiple elements of national power—diplomacy, information, economics, finance, intelligence, law enforcement, and

military".[6] The US strategic approach spells out the need for "more lethal force, strong alliances and partnerships, American technological innovation, and a culture of performance"[7] to achieve decisive military advantages.

The Pentagon policy of increasing the competitive space across multiple domains of diplomacy, information, economics, finance, intelligence, law enforcement, and the military was evident in Trump's administration power play. Series of actions across these multiple levels are likely to challenge the growing Chinese and Russian assertiveness.

- *Diplomatic Intransigence:* Despite the change of guard at Washington, the US policy towards China and Russia appears unchanged. The rising competition and conflict with China have led to QUAD's formation since the US, Japan, Australia and India have converged interests. The Biden administration will find it difficult to overturn Trump's protectionist and nativist "America First" policy in the aftermath of the COVID-19 crisis precipitated by China. Both the countries have locked horns on a wide range of issues related to discriminatory trade barriers, forced technology transfer, the militarisation of the South China Sea, intimidating Taiwan, human rights and religious freedom, government-sponsored cyber-enabled economic espionage and Chinese interference in other countries' political systems. Against Russia, the Biden administration may continue to play hardball to keep Russia tethered by neither mending nor further inflaming the relationship between them.
- *Exploiting the Economic Fault Line:* The strategic competition focuses on obstructing China's rise through two-fold measures. First, by decoupling the American economy from China's through supply chain diversification and secondly delaying and disrupting China's economic expansion by creating trade, tariff, and technology barriers. It aims to compel China to alter its behaviour. The US sees China's Belt and Road Initiative (BRI) as Chinese economic aggression to create a client state

throughout the Indo-Pacific, Africa, the Middle East, Europe, and the Americas. While China views BRI to enhance its trade connectivity, reduce surplus domestic industrial capacity, develop poorer interior provinces, promote energy security, and internationalise Chinese industrial and financial standards. The growth of China's global economic footprint makes it increasingly vulnerable to international and regional turmoil and terrorism. The PLA, mandated to protect China's overseas interests, is therefore forced to look for overseas basing infrastructure to deal with threats to its global interest. Further, the Chinese financial expert, like former People's Bank of China (PBOC) Governor Zhou Xiaochuan, advocates a larger global role for the yuan by displacing the dollar-denominated global financial system.[8] However, in the case of Russia, the US may continue using sanctions to hurt the pandemic-battered Russian economy. It allows the US to leverage its negotiations for the New START treaty with the Russian.

- *Laying out Legal Labyrinth:* Washington realises that the new cyber and space domain needs to navigate the trading partners' legal labyrinth. To unlock the value chain for wealth generation, it needs to create business-friendly legislation to promote its companies' interests. The headwind related to data sovereignty and the Internet of Things (IoT) has compelled it to make a compliant legal framework given the EU and Chinese legal requirement of data localisation and IPR related issues on content aggregation. To prevent the sale of arms and ammunition from adversaries like Russia and China, it has created legislations like Countering America's Adversaries through the Sanctions Act (CATSAA). Similarly, it is influencing international legislation related to the autonomous system, use of global commons,[9] and outer space.
- *Military Modernisations and Capability Enhancement:* The final Quadrennial Defence Review (QDR) of Obama's administration sought the capability to defeat a regional aggressor and impose unacceptable costs on a second aggressor in another region. However,

the Crimean conflict left the US red-faced as it showed its inability to secure favourable outcomes. Thus, the 2018 NDS imposes higher demands on the military. The NDS charges the military services with building a more lethal force, strengthening alliances and attracting new partners, and reforming Pentagon for greater performance and affordability. However, the 2018 NDS approach of 'compete, deter, and win' opens up the US military to a multi-front scenario.

The US Operational Construct

The US prioritisation of preparedness for war looks at three things: First, to deter aggression across the Indo-Pacific, Europe, and West Asia; second, to degrade terrorist and WMD threats; and third, defend US interests from the challenges below the level of armed conflict. China and Russia, being strategic competitors, find themselves engaged across all spectrum of war. The concept of deterrence, degradation and defence employed by the US against these nuclear powers calls for restrained retaliation to prevent conflict escalation. For the US to maintain the force credibility and superiority, it needs to preserve its economic and technological dominance to navigate the international power play. The rules of the game by the US therefore include:

- *Be Strategically Predictable, But Operationally Unpredictable:*[10] To deter or defeat long-term strategic competitors', the US intends to target its adversaries by introducing the concept of unpredictability through integrated actions planned in coordination with allies and partners. It aims to outmanoeuvre the competitors by stymieing their efforts, preventing them from exercising their options and compelling them to confront adverse conditions. The reliance is on the creation of lethal force by modernising capabilities in the new and niche domains.
- *Counter Coercion and Subversion through Integrated US Interagency Actions:*[11] The Chinese and Russian use of political subversion,

proxies, and the threat or use of military force to change facts on the ground has incensed the Pentagon. Besides this, the Chinese predatory economic method of technology transfers and IPR violations has prompted Washington to expand the competitive space. It exercises a series of combined US interagency actions through the State, Treasury, Justice, Energy, Homeland Security, Commerce, USAID, the Intelligence Community, law enforcement, and other departments. It seeks to counter Chinese and Russian coercive acts by identifying and addressing the vulnerabilities in economic, technological, and information areas. The trade, technology, and currency wars at play during the Trump era are the precursor to the larger games of dominance and disruption that are likely to unfold.

Examining the US Military Objectives

According to the US National Defense Strategy Commission, "America's military superiority—the hard-power backbone of its global influence and national security—has eroded to a dangerous degree".[12] Hence, the 2018 NDS is an essential strategic document guiding the Pentagon's priorities, investments, and programming decisions. The prioritised objectives of deterring war, protecting the security of the country and winning the highly competitive conflicts remain a crucial concern for the US planners.

The critical military objectives for Pentagon therefore are:

- *Defending the Homeland from Attack:* The 9/11 disaster at the start of the 21st Century compelled Pentagon to an out of area operations to exterminate global threats emanating outside the US soil. However, prolonged stability operations in Afghanistan and West Asia, coupled with the poor handling of the COVID-19, has shown the chinks in the US security apparatus. The US policymakers realise the graver threats in its inability to deal with engineered protests like the '#blacklifematters' campaign that creates a societal cavity, the healing of which may take a long time. While advocating 'massive retaliation' and 'left of

launch strategy' designed to counter CBRN and missile threats, the US policymakers are also looking at pre-empting terror acts or protest plots at home. It has created a Geographical Information Grid under the US Space Command and carried out interagency coordination to improve situational awareness across all domains.

- *Defending Vital Interests through Deterrence:* For the US to dominate world affairs, it knows that it has to protect its economic and financial dominance by retaining technological superiority. The envelope of cyberspace promoted through an aggressive space programme need protection. Pentagon also knows that deterrence is dependent on precision long-range stand-off vectors and missile defence capabilities. Hence, it aims to employ multi-domain measures to address its vulnerabilities, like creating unhackable communication and space-based interceptor layers. It has introduced the Arms Export Control Act (AECA) and International Emergency Economic Powers Act (IEEPA) to prevent evasion of export of sensitive military technologies. It is also looking at ways to prevent China from information harvesting under the garb of laws like National Security Law, Cyber Security Law, National Cyber Security Standards and Technical Committee Standards.
- *Defending Allies from Military Aggression, Supporting Partners Against Coercion, and Fairly Sharing Responsibilities for Common Defence:* This big charter makes Pentagon look at the Chinese coercion and anti-access and anti-denial (A2AD) strategy deployed in the Pacific against its allies, including Japan, South Korea, Taiwan, Philippines, and Micronesian republics. It also aims to demonstrate its ability to deter Russian invasion in the Baltics through credible combat capabilities. Against North Korea and Iran, it aims at employing punitive deterrence. All these entail a four-fold process. First, the US intends to maintain an adequate force in Indo-Pacific. Second, it would like to strengthen the EU and NATO forces against

the Russian threat. Third, improve its surveillance capabilities against states sponsoring terrorism. Fourth, evolve security mechanism to strengthen its partners and allies that allow it flexibility in intervention and engagement, if required.

Priorities for Military Modernisation

Unfortunately, the 2018 NDS creates a strategy resource gap for the US. It needs to handle two peer nuclear competitors China and Russia, two rogue nuclear states in North Korea and Iran and tackle the unfinished wars in Afghanistan and Iraq with the threat of terrorism looming large with increasing footprints and varied manifestations. Freedom of navigation exercise by the US and its allies in the South China Sea and long-range joint air patrol by Russia and China over the South Korean Air Defence Identification Zone (ADIZ) on 23 July 2019 is a precursor to testing tolerance by adversaries and hotting up of the grey-zone competition. Russia and China are likely to employ disruptive measures short of war using multiple tools of statecraft to expand their influence and weaken US alliances and partnerships. Near simultaneous contingencies will stretch US resources and may undermine its deterrence and coercive ability. Washington priorities remain to increase US influence and preserve market access. It, therefore, needs a military with credible combat power capable of operating across the entire spectrum of conflict. The priorities of military modernisation as identified in 2018 NDS are as follows:[13]

- *Nuclear forces:* It endeavours to modernise its nuclear force by developing options to counter competitors' coercive strategies predicated on the threatened use of nuclear or strategic non-nuclear attacks.
- *Space and Cyberspace as Warfighting Domains:* It is prioritising the building of resilient cyber and space capabilities. It looks at the continued integration of these capabilities into the full spectrum of military operations. The reconstitution of operations to assure

the survivability of the assets has manifested in the creation of the US Space Command and assigning the status of fighting theatre command to the US Cyber Command in 2018.

- *Command, Control, Communications, Computers and Intelligence, Surveillance, and Reconnaissance (C4ISR):* It contemplates building a robust, survivable information ecosystem with an ability to attribute and hold accountable state or non-state actors during cyber-attacks. The capability spans from tactical to strategic planning to exploit information while denying them to the competitors.
- *Missile Defence:* It looks at layered missile defences and disruptive capabilities for missile threats.
- *Forward Force Manoeuvre and Posture Resilience:* While prioritising between various forces component, including space, the endeavour is to transition into "smaller, dispersed, resilient, adaptive basing that include active and passive defences".[14]
- *Advanced Autonomous Systems:* It looks at developing military and commercial applications in autonomy, artificial intelligence, and machine learning to provide competitive military advantages.
- *Resilient and Agile Logistics:* In the face of persistent multi-domain attack, it endeavours to create a non-commercially dependent distributed logistics and maintenance system to undertake strategic mobility and provide sustained logistics support to partner and allies.

US DoD Budgetary Support

2018 NDS guides Defence Budget. The defence budgetary request for FY2020 was pegged at US$ 712 billion, while the FY2021 request stands at US$ 705 billion.[15] It represented 4.9 per cent nominal growth (2.8 per cent real growth) over the FY2019 enacted appropriation.[16] In 2018, The US Cyber Command was elevated to become the combatant command. It announced the reactivation of US Space Command as a unified combatant command. The FY2020 budget request reinforced

these actions by recognising the increased importance of space and cyber warfighting with additional resources. The budget request for FY2021 clearly emphasises the "irreversible implementation of 2018 NDS". The significant budget allocation, capability and capacity development in the various field made in FY2020 are as follows:[17]

- *Space (FY2020 US$ 14.1 billion & FY2021 US$ 18.0 billion):* It earmarked resources for the expeditious building of the new US Space Force HQ. The budget allocation aimed to reduce the risk of satellite communications jamming besides increasing the provisions for the Global Positioning System, strengthening satellites and operational control system, space-based missile warning capabilities and space launch capacity.
- *Cyber (FY2020 US$ 9.6 billion and FY2021 US$ 9.8 billion):* The intended budget was to support offensive and defensive cyberspace operations, modernise DoD's multi-cloud environment while investing in enhancing the cybersecurity capabilities.
- *Air (FY2020 US$ 57.7 billion and FY2021 US$ 56.9 billion):* Besides focussing on improving the ISR capabilities, it aimed at increasing the capability and capacity of 4th and 5th Generation Aircraft (110 in FY2020 and 115 in FY2021), Advanced Medium-Range Air-to-Air Missile (AMRAAM) (389 quantity in FY2020 and 789 in FY2021) and Joint Air-Surface Missile—Extended Range (JASM-ER) (430 quantity in FY2020 and 400 in FY 2021). In FY2021, it has initiated five Special Operation Forces Armed Overwatch capability.
- *Maritime (FY2020 US$ 34.7 billion and FY2021 US$ 32.3 billion):* The primary focus remains to increase the battle force fleet from 296 to 314 by FY2024 besides three Virginia Class Submarines. The priority also remains to enhance unmanned systems through the introduction of two large Unmanned Surface Vehicles (USVs) and stand-off missiles like the Long-Range Anti-Ship Missiles (LRASM) (48 quantity) and Maritime Strike Tactical Tomahawk (TACTOM) (90 quantity).

- *Land (FY2020 US$ 14.6 billion and FY2021 US$ 13.0 billion):* Instead of firepower getting the priority, the bulk of the fund aims to expand ground manoeuvre capacities by adding combat-motorised vehicles (6,402 in FY2020), Joint Light Tactical Vehicles (4,090 in FY2020 and 4,247 in FY2021) and Amphibious Combat Vehicles (56 in FY2020 and 72 in FY2021) for employment by the Marine Corps.

- **Multi-Domain**
  - *Missile Defeat and Defence (FY2020 US$13.6 billion and FY2021 US$ 20.3 billion):* The FY2018 and FY2019 budgets helped create a 20-silo missile field in Fort Greely, Alaska. Due emphasis is being given to expand the capabilities for Ground-Based Missile Defences, Terminal High Altitude Area Defence (THAAD) interceptors (37 in FY2020 and 41 in FY2021) and Aegis Ballistic Missile Defence (SM-3) missiles (37 in FY2020 and 40 in FY2021) for regional missile defence. A significant allocation of US$ 174 million has been made to enhance the space-based missile warning and ground control enhancements to address hypersonic threats. Substantial allocations have also been made to develop boost-phase and advanced technology missile defence systems besides directed energy and air-launched kinetic interceptors to destroy adversary ground-based missiles prior-to-launch.
  - *Nuclear Enterprise (FY2020 US$ 14.0 billion and FY2021 US$ 17.7 billion):* The US 2018 Nuclear Posture Review is guiding the US nuclear modernisation drive. To keep the US nuclear deterrent credible and modernised for decades, the document underscores the need for the nuclear triad, recapitalisation of the nuclear-armed missiles, submarines, bombers, dual-capable aircraft, and related infrastructure. The FY2018 and FY2019 budgets were invested

in upgrading the Columbia class ballistic missile submarine (US$ 2.2 billion), Long Range Standoff Weapon, Ground-Based Strategic Deterrent, and B-52 modernisation. The FY2020 budget focussed on ground-based strategic deterrent (US$ 570 million), B-21 Bomber (US$ 3 billion), and long-range stand-off weapon (US$ 712 million). Other areas of modernisation include missile warning capabilities, Nuclear Command, Control and Communications (NC3) capabilities across the spectrum of military operations (US$ 2.5 billion). The US Department of Energy, which funds most of the US nuclear programme, shows an 11.8 per cent increase in their FY2020 funding to US$ 12.4 billion.[18]

- *Special Operations Forces (SOF) (FY2020 US$ 3.4 billion and FY2021 US$ 3.0 billion):* The US began to increasing the SOF end-strength by FY2018. The FY2020 budget was dedicated to enhance research and development, improve high-end warfighting while sustaining Counter-Terrorism (CT) and Countering Weapons of Mass Destruction (CWMD) missions. Irregular Warfare (IW) was identified as a core competency. Accordingly, allocations aim to increase readiness and lethality through investment in new technologies. It includes investments in Directed Energy (US$ 27.2 million), AC/MC-130J aircraft/ gunships (US$ 342.8 million), CV-22 tilt-rotor aircraft (US$ 45.3 million) and additional surface and sub-surface maritime craft systems (US$ 105.7 million).
- *Technology:* The US departments engaged in technology development includes the military departments and their laboratories, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and the defence agencies like DARPA (Defence Advanced Research Projects Agency). The technology development focus of the US military are:

- Unmanned/Autonomous: To enhance the freedom of manoeuvre and lethality in contested environments by developing offensive-armed Unmanned Surface Vessel, Unmanned Undersea Vehicle and Autonomous Logistics Platforms (FY2020 US$ 3.7 billion and FY2021 US$ 1.7 billion).
- Microelectronics/5G and Artificial Intelligence: The US unveiled its Artificial Strategy in 2020. It aims to expand military advantage with the Joint Artificial Intelligence Centre (JAIC) and Advanced Image Recognition (Project Maven) (FY2020 US$ 927 million and FY2021 US$ 800 million). In FY2021, it addresses issues related to the trusted and assured supply of microelectronics besides hastening the adoption of 5G connectivity for greater network bandwidth (FY2021, US$ 1.5 billion).
- Hypersonic: Pentagon sees its applicability with all three services. It aims to enable Air Force Advanced Rapid Response Weapon (ARRW), Navy Sea-Launched Conventional Prompt Strike, and Army Long Range Hypersonic Weapon (LRHW) by infusing US$ 2.6 billion in FY2020 and US$ 3.2 billion in FY2021.
- Directed Energy (DE): The US continues with the development of offensive and defensive DE capabilities. It supports the implementation of DE for base defence, enables testing and procurement of multiple types of lasers, and has increased its research and development for scalable high-power density applications (FY2020 US$ 235 million).
- Quantum Technology: The quantum technology race is likely to determine the future of technology. Quantum cryptography and communications create unhackable networks. The massive quantum computing capabilities create innumerable possibilities

of cracking prevalent encryption and better discrimination which may sound the death knell for stealth technology. Notable progress in quantum radar, sensing, imaging, metrology and navigation will enable greater precision and sensitivity. Quantum materials, such as topological insulators, can improve quantum computing. Quantum research is a long-term vision by China as it plans to spend more on R&D by 2030 than any other country.[19] The US is worried that any gains by the Chinese in quantum technologies could alter the future military and strategic balance of power. The 2019 'Worldwide Threat Assessment' report to the US Senate points out how the quantum cryptography networks could frustrate US cyber intrusion and signals intelligence capabilities. Hence, the US has authorised the National Quantum Initiative Act (NQI) to invest US$ 1.2 billion in quantum information science over five years. US Department of Energy has announced another US$ 80 million for quantum research. US DARPA budget of US$ 3.6 billion in FY2020 is devoted to critical technologies like AI and Quantum.[20]

Lessons for India

Non-contact warfare is testing the threshold of violence and the use of force. It has altered the way countries look to settle political disputes and conflicts. A country like India with two nuclear neighbours, unsettled active borders across two fronts, and an ongoing proxy war need to plan for a two and half front war as part of a typically traditional security outlook. However, the expanded security landscape led by cyber and space and guided by the new generation technologies of quantum, AI and 5G can compress the window of application from tactical to the strategic level. The engineered conflicts pose new challenges in the non-traditional security arena. In this area, the armed forces have

no jurisdiction or little participation as yet. Hence, national security strategy, whether declared or not, is essential to guide future force design.

Non-contact warfare aims at subverting the politico-eco-social systems. It targets the edifices of national power like finance, industries, commerce, critical technologies, critical resources for new materials, energy grids, transportation, information highway, influence engine within a country like media, academia, political entities, NGOs and societal peace. As part of the national security strategy, the PLA and Pakistan Army have developed sub-threshold capabilities to engage their adversaries in a grey-zone conflict or proxy war. The intent is clear- to keep the adversary engaged in an endless battle at the sub-threshold level and prevent the conflict from spiralling out. The operational environment created by them aims to achieve strategic stability while continuing with the resistance and offence at the operational and tactical level.

The immediate question confronting India is: Where does the security problem lie? How well is India equipped to safeguard its population and interests? Should the western-styled Indian Army continue to work in its traditional space or look for a non-traditional security mandate? As India develops economically, it will have to manage strategic friction. Hence, it requires a doctrinal approach to security, better civil-military integration, technological innovation, a better defence industrial base and robust law enforcement.

The stakes for security will increase as India grows. It will entail a need for better civil-military synergy, the ability to safeguard the sovereignty of new domains like data, technology, space and outer space and deep-sea besides traditional security domains and above all, the creation of asymmetric capabilities. India will do well to manage its fault lines and create alliances and partnership, which will usher in stability and guarantee security. India has to be prepared for Non-contact warfare as it is the future of war, and it needs a whole-of-a-government approach.

According to Indian Chief of Army Staff General MM Naravane, "victory no longer rests on the ability to inflict massive destruction but on the ability to wrestle popular support from one's opponent".[21]

Examining the US and China and the US and Russia powerplay, it is evident that the thrust for fighting the protracted conflict lies in increasing the strategic space of contest. The reliance will be to engage the adversary across multiple domains while maintaining force parity. It has been observed that the approach to warfare becomes aggressive if the force asymmetry is significant, e.g., Russia and Ukraine and the US and Iraq engagements. India must therefore undertake capability and capacity building based on the security profiling of its adversaries. National security is the cumulative sum of a collaborative effort across PIMED (political, intelligence, military, economic and diplomacy). The world is still wedded to balance of power syndrome. Hence military will continue to be the pivot over which nations will play the hardball.

Notes

1. Department of Defense, United States (2020), "Summary of the 2018 National Defense Strategy of The United States of America", p. 4. Available online at https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf, accessed on February 9, 2021.
2. Brigadier Vivek Verma (2021), *Non-Contact Warfare: An Appraisal of China's Military Capabilities*, New Delhi: Pentagon Press.
3. Ibid.
4. Department of Defense, United States (2020), "Summary of the 2018 National Defense Strategy", n. 1.
5. Zhang Tuosheng (2011), "A Study of China's Behavior in International Military and Security Crises" [Zhongguo Junshi Anquan Weiji Xingwei Yanjiu]", World Economics and Politics [Shijie Jingji yu Zhengzhi], April 14, 2011, pp. 103-121.
6. Department of Defense, United States (2020), "Summary of the 2018 National Defense Strategy", n. 1.
7. Ibid.
8. "China's former central bankers warn of lasting currency war with US", *The Business Times*, 10 August 2019. Available online at https://www.businesstimes.com.sg/government-economy/chinas-former-central-bankers-warn-of-lasting-currency-war-with-us, accessed February 12, 2021.

9. UN System Task Team on the Post-2015 UN Development (2013), "Global governance and governance of the global commons in the global partnership for development beyond 2015", January 2013. Available online at https://www.un.org/en/development/desa/policy/untaskteam_undf/thinkpieces/24_thinkpiece_global_governance.pdf, accessed February 12, 2021.
10. Department of Defense, United States (2020), "Summary of the 2018 National Defense Strategy", n. 1.
11. Ibid.
12. Eric Edelman, et al. (2018), "Providing for theCommon Defense: The Assessment and Recommendations of the National Defense Strategy Commission", National Defense Strategy Commission, 13 November 2018. Available online at https://www.usip.org/sites/default/files/2019-07/providing-for-the-common-defense.pdf, accessed on February 18, 2021.
13. Department of Defense, United States (2020), "Summary of the 2018 National Defense Strategy", n. 1.
14. Ibid.
15. Office of The Under Secretary Of Defense (Comptroller)/Chief Financial Officer) (2020), "Defense Budget Overview: Irreversible Implementation of the National Defense Strategy", Revised May 2020. Available online at https://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2021/fy2021_Budget_Request_Overview_Book.pdf, accessed on February 20, 2021.
16. Ibid., pp. 1-4.
17. Ibid., pp. 1-9.
18. Department of State, United States (2020), "Congressional Budget Justifications: Deaprtment of State, Foreign Operations and Related Programs", Fiscal Year 2020, 11 March 2019. Available online at https://www.usaid.gov/sites/default/files/documents/1868/FY_2020_CBJ.pdf, accessed on February 21, 2021.
19. Paul Smith-Goodson (2019), "Quantum USA Vs. Quantum China: The World's Most Important Technology Race", *Forbes,* 10 October 2019. Available online at https://www.forbes.com/sites/moorinsights/2019/10/10/quantum-usa-vs-quantum-china-the-worlds-most-important-technology-race/#17c896d272de, accessed on February 21, 2021.
20. Ibid.
21. Quoted in "Focusing on dynamic response that is below threshold of all-out war: Indian Army chief", *The Economic Times*, 4 March 2020. Available online at https://economictimes.indiatimes.com/news/defence/focusing-on-dynamic-response-that-is-below-threshold-of-all-out-war-indian-army-chief/articleshow/74471547.cms?from=mdr, accessed on February 22, 2021.

Armenia-Azerbaijan Conflict: Implications for India

Neeraj Trivedi

Abstract

Armenia-Azerbaijan conflict in September-November 2020, was followed keenly by military strategists across the world. It was the first time a nation had been comprehensively defeated by the use of drone warfare. The changing nature of warfare and use of disruptive emerging technologies to change the tide of battle was an issue of interest across the world. Employment of drones on the battlefield of Nagorno-Karabakh had been a game changer for Azerbaijani forces which destroyed the Armenian air defence (AD) resources, mech columns and arty guns. The low-cost option of employment of drones by Azerbaijan in a non-contact yet highly kinetic warfare resulted in minimizing of their own casualties and ensuring a crushing defeat for Armenia. As India embarks on the modernisation of its Armed Forces in line with its growing stature on the world stage, there has to be a balance struck between the acquisition of conventional weapon platforms and the embracement of new emerging technologies in India's strategic security calculus. There is a need for building of anti-access bubbles as deterrence which are difficult to penetrate and use of technologies which provide leverage in this competitive space.

Introduction

The Armenia-Azerbaijan conflict will go down in the annals of history as the first conflict in which drones deployed by one side turned the tide in the

Colonel **Neeraj Trivedi** is Senior Fellow at Centre for Land Warfare Studies, New Delhi.

44 days war. Military strategists around the world closely watched this conflict to study its ramifications on the future of battlespace. It ended in a humiliating defeat for Armenia and has important lessons for the military planners. The changing character of warfare and use of disruptive technologies to change the course of battle has been an issue of interest across the world. Employment of drones by Azerbaijan on the battlefield of Nagorno-Karabakh has been a game-changer and brought a shift in the dynamics of warfare.[1]

Emerging technologies have always brought changes to the character of warfare. For instance, when Babar used gunpowder it made the use of elephants lose their significance. Each War gets characterised by some innovation whether in tactics or by use of some disruptive technology. World War I witnessed the emergence of trench warfare and World War II saw the use of Mech forces in the blitzkrieg operations. In the last two year plus there have been many incidents of use of drones in warfare such as the attack on the Aramco oilfields by Houthi rebels, assassination of Soleimani, Operation Spring Shield launched by Turkey in Syria and the conflict of Nagorno-Karabakh.

In this perspective, the article seeks to assess the use of drones in changing the character of warfare in 21st century. In doing so, the study will examine the case of Nagorno-Karabakh conflict based on lessons drawn and assess the factors that shaped the fate of the conflict. It will also assess implications for India and draw suitable recommendations.

Nagorno-Karabakh Conflict

Historical Underpinning

The Caucasus mountains are the continental divide between Asia and Europe. They stretch between the Black Sea and the Caspian Sea. This region is very rich in oil and minerals. The Caspian Sea has huge reserves of oil and the Baku-Tiblis-Ceyan (BTC) pipeline is vital for crude oil supply to Central Europe and a major source of revenue for Azerbaijan,

Georgia and Turkey. Armenia, Azerbaijan along with Georgia are part of the Caucasian countries. Because of the strategic and geographical significance of the Caucasian region the major stakeholders Iran, Russia and Turkey try to dominate the geopolitics of this region and hence the powerplay.

Both Armenia and Azerbaijan were part of the erstwhile Soviet Union when it was formed in the 1920s. Armenia is a landlocked country with Georgia to its North, Turkey to its West, Azerbaijan to its East and Iran to its South. Eighty-five per cent of the terrain is mountainous with fast-flowing rivers. The economy is primarily dependent on industrial output and minerals. It is a landlocked country with an average elevation which is the tenth highest in the world. Its capital is Yerevan and Prime Minister is Nicole Pashinyan who came to power in 2018, in what he describes as his Velvet Revolution. This was different from the other coloured revolutions as there was no foreign interference and it was a movement fuelled by domestic issues. The majority of the Armenian population is of ethnic origin (98 per cent) who follow Christianity. It is an ancient country and one of the oldest cradles of civilisation.

Azerbaijan on the other hand has a majority of Muslim Shia population with 97 per cent of them being of Turkish origin. Azerbaijan has an area of 87,000 sq km and it's capital is Baku. The terrain has Caucasus mountains to its North-East, flatlands in the centre and Caspian Sea on its Eastern coast. It has high economic development, a fall out of the new found petro-dollars coupled with a high literacy rate. Its head of state is President Ilham Aliyev, who has been in power since 2003 and is a strong authoritarian leader. Azerbaijan, when it gained independence was split into two parts.-The part separated from the mainland is called the Nakhchivan Autonomous Republic, a case similar to that of erstwhile East and West Pakistan, in the Indian sub-continent.

Geographical Underpinning

Nagorno-Karabakh is an autonomous region, having a majority of ethnic Armenian population of Christian faith and therefore is backed by Armenia who regards it as an integral part of their country. It has important towns of Stephenkart which is its capital and another town of Shusha which has Azeri population. There is a Lachin corridor which has strategic importance as this corridor connects it with Armenia. The name Nagorno-Karabakh itself implies Black Mountains but the Armenians prefer to call it as Artsakh. It has a population of 1.5 lakh and an area of 44,000 sq km. This region has internationally been recognised as part of Azerbaijan, since the disintegration of the Soviet Union. This area has been the bone of contention between Armenia and Azerbaijan and a cause of many conflicts. Nagorno-Karabakh parliament had voted for unification with Armenia in 1988. This was unpalatable to Azerbaijan which always considered this region as an integral part of their territory. It led to guerrilla warfare; and unrest in the region. A referendum was conducted in 1991 at Nagorno-Karabakh, which was boycotted by the Azeri Muslims living in the region. It declared itself as an independent republic although this wasn't recognized by any of the UN-led nations. In the early 1990s, a war erupted between the two nations which resulted in an Armenian victory backed by Russian military. Armenia gained control of around 20 per cent of Azerbaijani territories (7 districts surrounding Nagorno-Karabakh region). It became an emotive issue between both the countries and led to an escalation in arms race along with a low intensity conflict. There was a four-day war in the year 2016 and the skirmishes have left 30,000 persons dead with more than 100 million people displaced on both sides of the border.[2]

Figure 1: Map depicting Area of control after the conflict of 1990s

Source: Adapted from *TRT World*.[3]

Geo-politics and Important Stakeholders to the Conflict

Different nations have sided with the two sides based on their own national strategic interests. The geostrategic importance of this region, rich in oil and minerals has resulted in a power play by various stakeholders trying to increase their spheres of influence and a power struggle to control it. Armenia gained the support of Russia as well as Iran, which itself is a Shia Muslim country and backed a Christian majority state. There are many reasons attributed to good relations between Armenia and Iran, such as: historical ties having been part of the earlier Mesopotamian Empire, and also as major trade partners. Russia too has been a cementing factor building relations between Armenia and Iran. Iran also has a population of around 20 million Azeri Turks who have been influenced by the rising Turkish nationalism and raised demands of Greater Azerbaijan including territories of Northern Iran. Therefore, Iran readily supports Armenia as a counterweight against Azerbaijan. The close ties of Azerbaijan with Israel, a sworn enemy of Iran, also makes it side with Armenia as a natural partner. Iran through its partnership with Armenia, also wants to balance out the growing nexus between Turkey and Azerbaijan. Russia, on the other hand, has a strategic alliance of CSTO (Collective Security Treaty Organisation) with Armenia and has its 102 Russian Military Base stationed at Gyumri, in Armenia.[4]

Azerbaijan enjoys the support of all Muslim nations, especially Turkey as its staunch ally. Turkey and Azerbaijan share deep-rooted historic, cultural and ethnic ties. It has been described as one nation and two states by the erstwhile President and father of the incumbent President Ilham Aliyav. The international organisations striving to bring a resolution between the two warring nations are the UN and the OSCE (Organisation of Security and Cooperation in Europe) also called the Minsk Group. All other global powers have been giving a clarion call for a ceasefire and an amicable resolution.[5]

Course of the Conflict

With the newfound petro-dollars economy, Azerbaijan went in for a systematic modernisation of its armed forces. Armenia, on the other hand, has been dependent on vintage Russian defence equipment , while Azerbaijan has been on a buying spree of latest arms and equipment. Azerbaijan has a defence budget which is as high as 5.4 per cent of its GDP while Armenia has a modest outlay of 1.5 per cent of GDP.[6] This has resulted in conventional and numerical superiority for Azerbaijan in the number of tanks, armoured fighting vehicles, Arty guns and the number of fighter jets.

There were many factors which led to the escalation of hostilities between the two countries and the war which ensued. The recent conflict had many triggers such as, when Prime Minister Pashinyan took over, he rejected the basic principles of the Minsk group. Armenia adopted a new military doctrine and a movement supporting Artsakh becoming a part of Armenia took place in August 2019. This was followed by rejection of peace talks in March 2020 by Armenia. A military exercise was conducted with Russia by Armenia in July and early September 2020.[7] Azerbaijan conducted a military exercise with Turkey in July-August 2020 and pro-war demonstrations erupted with Turkish support. Clashes erupted between both the countries on 27 September 2020 where even the civilian

areas were targeted. A two-prong offensive was launched by Azerbaijan, in which the Northern offensive was stalled but the Southern offensive made progress.[8] The war ended up with Azerbaijan reclaiming the areas it had lost earlier securing its borders with Iran. It captured the important town of Susha while threatening Stephenkart and the strategic Lachin corridor. This was unacceptable to Armenia and at the behest of Russia it agreed to come on to the negotiating table for a ceasefire.

Fallout of the Conflict

A ceasefire was signed between both the countries with Russia playing a major role in cessation of hostilities. The 2020 conflict helped Russia consolidate its own position in the geopolitics of the region by playing the role of peace broker and stationing more of Russian troops in the disputed region.[9] Turkey backed Azerbaijan to the hilt in this conflict, which was in line with its own ambitions of playing a bigger role on the world stage and staking a claim for the leadership of the Muslim world.

In the recent conflict, Azerbaijan not only reclaimed their lost territories but also decimated Armenian forces in a crushing defeat. Armenia agreed to return back all territories of Azerbaijan which it had captured earlier and provide a safe corridor (Meghri Corridor) along the border of Iran for connecting the Nakhchivan Autonomous Enclave with the mainland of Azerbaijan.[10]

The number of casualties suffered by Azerbaijan in terms of equipment were 1/7 of those suffered by Armenia. Heavy casualties were suffered by Armenian AD resources, mech columns and Arty guns due to drone attacks and targeting by long vectors.[11] There was a public outcry in Armenia seeking the stepping down of Prime Minister Pashinyan. Even the speaker of the house was assaulted in Parliament. On the other hand, in Azerbaijan there was a victory parade taken out with Turkish President Recep Tayyip Erdogan as its chief guest for the unstinted support in the conflict.[12]

Lessons to be Learnt from the Armenian Defeat

Important lessons which can be drawn, are as follows:

- The balance of power in the conflict shifted in favour of Azerbaijan because of their effective use of Turkish and Israeli drones, which destroyed the Armenian AD resources, mech columns and arty guns. The low-cost option of employment of drones by Azerbaijan in a non-contact yet highly kinetic warfare resulted in the minimising of their own casualties while ensuring a crushing defeat for Armenia.[13]
- Armenians made limited use of their Air Force and it was largely an uncontested airspace.
- There was no coordinated AD battle, the radars were unable to detect the small radio cross-section of the drones.
- Poor battle craft and fieldcraft, bunching of mechanised columns in a constricted battlespace with no camouflage, concealment and an absence of organic AD cover left them vulnerable.
- Poor training and non-tactical manoeuvres led to the vulnerabilities of the land units.
- Azerbaijan borrowed their concept of operations from Turkish operations during Operation Springshield in which they went for a systematic hunt of enemy AD, arty and mech columns.[14]
- Azerbaijan used old AN T2 surveillance aircraft as a bait to force the Armenian AD to open up and their radar signatures were picked up by the loiter ammunition in air and neutralised.
- Azerbaijan did not respond to the missile attacks from Armenian soil as they did not want to force the hand of Russian Forces. Due to the CSTO agreement between Armenia and Russia, the latter was obliged to bail out Armenia in case of an attack.[15]
- Azerbaijan ruled the battle of narratives by effective use of social media. It projected the conflict as a crusade between Christianity and Islam on European soil. The Ministry of Defence of Azerbaijan kept releasing video footages of the devastation that their drone attacks

were inflicting on the Armenian positions which demoralised the frontline Armenian soldiers and led to their unsystematic withdrawal.

Why Azerbaijan Won—Factors at Play

Use of Drones

Two drones were extensively used by Azerbaijani forces. The Turkish unmanned combat aerial vehicle (UCAV), Bayraktar drones is a Medium Altitude Long Endurance (MALE) drone, flies to heights of up to 27,000 feet and has endurance of 27 hours. It carries a payload of 150 kg of precision-guided and laser smart ammunition. The second, was the Harop drones, manufactured by the Israeli Aerospace Industries. They are the Kamikaze or suicide drones which are also called loiter ammunition. They have a very small radar cross-section and are anti-radiation drones which destroy enemy radars.

Israel also supplied Azerbaijan with Skystriker and Orbiter 1K suicide drones. Armenian AD was subjected to a duck shoot scenario. Vintage equipment, incompetent handling, no anti-drone measures resulted in destruction of even the lethal S-300 system. Use of loiter ammunition keep tracking, lock-on and neutralise the targets without any other collateral damage was highly effective and also conserved precious manpower.[16]

Geo-Politics and Power Play

The dynamics of the relations between various countries, as well as, the ongoing global politics also impacted the fate of the conflict. They are:

- Azerbaijan maintained good relations with both Russia and Turkey. Russia was supplying arms and military equipment to both Armenia and Azerbaijan. Prime Minister Pashinyan, tried to wean away from the strategic relationship Armenia enjoyed with Russia and woo the Western powers. These changes in foreign policy did not go down well with Kremlin. During this conflict, Russia did not come to the

rescue of its old ally Armenia taking the plea that it did not have any obligations under the CSTO agreement as the conflict was not on Armenian soil. In October end, when Russia did interfere, it was because it wanted to check the growing influence and dominant role being played by Turkey in the conflict, reassert and strengthen its own position in the region. It deployed it's Karsukha-4 EW system to bring down the Azerbaijani drones and send a strong message. Russian deployment of 2000 peacekeeping forces has further granted them a foothold in this region.[17]

- The military operations began and ended during the peak of US elections and while there was domestic turmoil in France which was heading the chairmanship of OSCE. NATO was also not able to keep Turkey under check, which has been displaying very aggressive foreign policies.
- OSCE was powerless to bring about a peaceful negotiation. Peace finally was brought about as a consequence of negotiations done after the war.
- Armenian suffered a humiliating defeat and loss of territory which did not go down well with the local population.
- This conflict also highlighted the rise of authoritarian regimes in Azerbaijan and Turkey with a nationalist fervour.[18]
- Turkey has been following very aggressive foreign policies on the world stage in a bid to stake claim as a leader of the Ummah or the Muslim world.
- All stakeholders were finally just trying to further their own national interests and no one was really interested in finding a lasting and peaceful resolution to the issue.

Implications For India

There are numerous implications which can be drawn out from this conflict, which are as follows:

- The use of emerging, disruptive technologies can shift the balance of power in a short duration war.
- The growing nexus between Azerbaijan-Turkey-Pakistan-China,[19] needs to be factored in India's security calculus and therefore, there is a need to counter this nexus. Azerbaijan and Turkey have also been voting against India in many UN resolutions especially those concerning J&K and in support of Pakistan.
- This hostile alignment of forces also threatens India's International North South Transport Corridor (INSTC)—an over 7200 km length corridor that provides India, trade connectivity with Central Europe over a multi-mode network of transports.
- It also has implications for our energy security and for safeguarding our strategic energy assets. ONGC Videsh has made an investment of 1 billion USD in Azeri-Chiag-Gunashali (ACG) and Baku-Tiblis-Ceyhan (BTC) oilfields.[20]
- There is growing Chinese influence in South Caucasus, by means of financing developmental projects in the region. The Meghri safe corridor agreed to be provided by Armenia as part of a ceasefire agreement to connect Azerbaijan mainland with its autonomous enclave could also provide an alternative route for China's Belt and Road Initiative project which bypasses Iran.
- China is making huge investments in R&D for drone and counter-drone technologies. There is a growing nexus and cooperation between Pakistan-China-Turkey in these fields.
- Armenia and Azerbaijan have also become dialogue partners in Shanghai Cooperation Organisation.
- India had inked a contract to sell Swathi Weapon Locating Radar, made by Bharat Electronics Limited (BEL) and Defence Research and Development Organisation (DRDO) to Armenia in 2020. The supply could have been expedited as there is no greater sales pitch than having one's equipment validated for its efficacy in a live conflict,

especially keeping in view India's growing ambitions of being seen as an important and credible arms exporter.[21]

- The battle of attrition solely based on conventional, numerical superiority may no longer be as decisive with the advent of newer domains of warfare being embraced. India's modernisation plans have to be pragmatic, accompanied by changes in our doctrines and strategies. A recent example of this can be seen in the adoption of the new Overall Defence Concept by Taiwan in building up of asymmetric defences against a stronger adversary.[22]
- It also needs to be ensured that the conventional combat capabilities remain effective in face of use of disruptive technologies and the rapid technological shifts.
- Need for building of anti-access bubbles as deterrence which are difficult to penetrate and use of technologies which allow us to leverage this competitive space.
- Swarm drone attacks can be a game-changer in saturating the enemy's AD resources. India needs to develop indigenous counter-drone technologies to safeguard its assets. Civil-Military fusion along with synergy in efforts with the public sector undertakings would be essential in development of these technologies.
- There is a need to institute mechanisms to ensure an effective media management to win the battle of narratives so aptly demonstrated by Azerbaijan.
- Use of Syrian mercenaries[23] and non-state actors who came via Turkey to participate in the warfighting alongside Azerbaijan military is also an issue of concern and needs to be factored in our security calculus.
- Importance of fieldcraft and use of camouflage and concealment cannot be overemphasised. The relevance of traditional warfighting capabilities cannot be understated. It is not the question of development of these or the newer emerging technologies but

the concurrent, judicious development of both with jointness of operations and greater synergy.

- Use of UCAV in the network-centric future battlefield is going to be an important element, as is the case with all other disruptive technologies being embraced. Pakistan and China are actively employing these in their operational tasks. The efficacy or effect of the use of armed drones may not be as devastating as it was in Armenia-Azerbaijan conflict in the context of our sub-continent because neither will the battlespace be so constricted nor the air space so permissive, there will also be a heavy AD cover, counter-drone technologies and a very effective Air Force. Though, the use of drones for surveillance of border areas, smuggling of arms and ammunition, drugs, terrorist attacks and limited targeting of important military and civilian installations will definitely need to be factored in our operations.

Recommendations for India

Recommendations for the course of action for India from this conflict are as follows:

- India must continue to strengthen its bilateral ties with both Armenia and Azerbaijan in sync with its national strategic interests.
- India needs to go in for a sensible modernisation of forces giving due thought to force structure, its application and protection.
- Strategic military future with enhanced threats and shrinking defence budgets would need technology as a central pillar for improving our combat worthiness.
- India needs to build a transformative, digital era military with speed and scale which draws imagination and innovation into the combat.
- War games must factor in drone attacks, use of emerging technologies, aspects of perception management and building of own narratives effectively.

Conclusion

As India embarks on the modernisation of its Armed Forces in sync with its aspirations of playing a greater role at the world stage, it must safeguard its own national interests. The role of disruptive emerging technologies needs to be factored in our strategic security calculus and changes incorporated for faster procurement procedures and building an eco-system for self-reliance. There is a need for greater civil-military fusion in order to modernise the armed forces at the desired pace. India is purposefully moving in this direction with a time-bound roadmap to achieve a technology-enabled force with many indigenous drone and counter-drone projects by DRDO, HAL and some stellar work by civilian firms in pipeline.

Modifications need to be made in the war doctrines and strategies in order to embrace the newer domains of warfare along with the acquisitions of traditional warfighting platforms which will always remain relevant in the operations for holding, denying and occupying territories. The mech tactics need to be integrated with the new realities to remain relevant and effective in future operations with an organic AD cover. The AD resources need to have counter-drone technologies to detect, and neutralise the drone attacks. Counter drone systems should consist of multiple weapon systems including short-range weapons with a fast rate of fire, effective electronic warfare systems, direct energy weapons, hunting drone technologies, electromagnetic pulse systems and incorporating the new developments in magnetic shield systems. This military campaign does provide a good understanding of the changing character of warfare and the accompanied changes which need to be brought about in our warfighting capabilities.

Notes

1. "How drone warfare helped Azerbaijan vanquish Armenia- and the lessons for India", TimesNews.com, 20 November 2020. Available online at https://www.timesnownews.com/india/article/how-drone-warfare-helped-azerbaijan-vanquish-armenia-and-the-lessons-for-india/684508, accessed on February 5, 2021.

2. Naushad Khan et al. (2020), "Analysis of Arminia and Azerbijan War and Its Impact on Both Countries Economies", 11 October 2020. Available online at https://ssrn.com/abstract=3709329, accessed on February 7, 2021.
3. See "Calls grow for Azerbaijan, Armenia to end fighting over occupied Karabakh", *TRT World*, 27 September 2020. Available online at https://www.trtworld.com/turkey/calls-grow-for-azerbaijan-armenia-to-end-fighting-over-occupied-karabakh-40087, accessed on February 7, 2021.
4. S. Frederick Starr and Svante E. Cornell (eds.) (2014), "Putin's Grand Strategy: The Eurasian Union and Its Discontents", Central Asia-Caucasus Institute & Silk Road Studies Program. Available online at https://www.silkroadstudies.org/resources/1409GrandStrategy.pdf, accessed on February 8, 2021.
5. Lawrence Broers (2021), "Perspectives | The OSCE's Minsk Group: A unipolar artifact in a multipolar world", eurasianet, 11 May 2021. Available online at https://eurasianet.org/perspectives-the-osces-minsk-group-a-unipolar-artifact-in-a-multipolar-world, accessed on February 8, 2021.
6. Diego Lopes Da Silva et al. (2021), "Trends in World Military Expenditure, 2020", SIPRI Fact Sheet, April 2021. Available online at https://sipri.org/sites/default/files/2021-04/fs_2104_milex_0.pdf, accessed on accessed on February 8, 2021.
7. "Azerbaijan and Armenia: The Nagorno-Karabakh Conflict", Congressional Research Report R46651, Congressional Research Service. Available online at https://fas.org/sgp/crs/row/R46651.pdf, accessed on February 8, 2021.
8. "The Azerbaijan-Armenia conflict hints at the future of war", *The Economist*, 8 October 2020. Available online at https://www.economist.com/europe/2020/10/08/the-azerbaijan-armenia-conflict-hints-at-the-future-of-war, accessed on February 10, 2021.
9. "Armenia, Azerbaijan and Russia sign Nagorno-Karabakh peace deal", *BBC News*, 10 November 2020. Available online at https://www.bbc.com/news/world-europe-54882564, accessed on February 10, 2021.
10. Cengiz Candar (2020), "South Caucasus deal echoes plan from 30 years ago", Al-Monitor, 12 November 2020. Available online at https://www.al-monitor.com/originals/2020/11/turkey-russia-nagorno-karabakh-deal-armenia-azerbaijan.html, accessed on February 12, 2021.
11. Shaan Shaikh and Wes Rumbaugh (2020), "The Air and Missile War in Nagorno-Karabakh: Lessons for the Future of Strike and Defense", Center for Strategic & International Studies, 8 December 2020. Available online at https://www.csis.org/analysis/air-and-missile-war-nagorno-karabakh-lessons-future-strike-and-defense, accessed on February 12, 2021.
12. "Erdogan in Azerbaijan to hail 'glorious' Karabakh victory", *The Times of India*, 10 December 2020. Available online at https://timesofindia.indiatimes.com/world/europe/erdogan-in-azerbaijan-to-hail-glorious-karabakh-victory/articleshow/79656176.cms, accessed on February 14, 2021.
13. " How drones helped Azerbaijan defeat Armenia, and the implications for future modern warfare", The Print, 14 November 2020. Available online at https://theprint.in/opinion/

how-drones-helped-azerbaijan-defeat-armenia-and-the-implications-for-future-modern-warfare/544668/, accessed on February 14, 2021.

14. Can Kasapoglu (2020), "Turkey Transfers Drone Warfare Capacity to Its Ally Azerbaijan", *Eurasia Daily Monitor*, Vol. 17, Issue 144, The Jamestown Foundation, 15 October 2020. Available online at https://jamestown.org/program/turkey-transfers-drone-warfare-capacity-to-its-ally-azerbaijan/, accessed on February 14, 2021.
15. Dmitri Chirciu (2020), "Russia says defense pact does not apply to Karabakh", *Anadolu Agency*, 7 October 2020. Available online at https://www.aa.com.tr/en/europe/russia-says-defense-pact-does-not-apply-to-karabakh/1999169, accessed on February 14, 2021.
16. Lt Gen (Dr) V. K. Saxsena (2020), "Why Drones Turned the Tide for Azerbaijan? An Analysis", Vivekananda International Foundation, 4 December 2020. Available online at https://www.vifindia.org/article/2020/december/04/why-drones-turned-the-tide-for-azerbaijan-an-analysis, accessed on February 16, 2021.
17. "Russia Shot-Down A Total Of Nine Turkish Bayraktar Drones Near Its Armenian Military Base – Russian Media Reports", *The EurAsian Times*, 21 October 2020. Available online at https://eurasiantimes.com/russia-shot-down-a-total-of-nine-turkish-bayraktar-drones-near-its-armenia-military-base-russian-media-reports/, accessed on February 16, 2021.
18. Yohanan Benhaïm and Kerem Öktem (2015), "The rise and fall of Turkey's soft power discourse", *European Journal of Turkish Studies*, Vol. 21. Available online at https://journals.openedition.org/ejts/5275, accessed on February 17, 2021.
19. "Pakistan-Turkey-Azerbaijan Trilateral Partnership Emerges As A Big Threat To Armenia", *The EurAsian Times*, 23 January 2020. Available online at https://eurasiantimes.com/pakistan-turkey-azerbaijan-trilateral-partnership-emerges-as-a-big-threat-to-armenia/, accessed on February 20, 2021.
20. "ONGC Videsh acquires interest in Azeri, Chirag and Deep Water Portion of Guneshli Fields in Azerbaijan", Oil and Natural Gas Corporation Limited., 2 April 2013. Available online at https://www.ongcindia.com/wps/wcm/connect/en/media/press-release/ongc-videsh-acquires-interest-in-azeri-chirag-and-deep-water-portion-of-guneshli-fields-in-azerbaijan, accessed on February 21, 2021.
21. "India bags US$ 40 million defence deal to supply 4 radar systems to Armenia", TimesNow.com, 1 March 2021. Available online at https://www.timesnownews.com/india/article/india-bags-us-40-million-defence-deal-to-supply-four-radar-systems-to-armenia/559596, accessed on February 22, 2021.
22. Lee Hsi-min and Eric Lee (2020), "Taiwan's Overall Defense Concept, Explained", The Diplomat, 3 November 2020. Available online at https://thediplomat.com/2020/11/taiwans-overall-defense-concept-explained/, accessed on February 22, 2021.
23. Raja Abdulrahim (2020), "Turkish-Backed Syrian Fighters Join Armenian-Azeri Conflict", *The Wall Street Journal*, 14 October 2020. Available online at https://www.wsj.com/articles/turkish-backed-syrian-fighters-join-armenian-azeri-conflict-11602625885, accessed on February 22, 2021.

AI in the Indian Armed Services: An Assessment

Kartik Bommakanti

Abstract

This article surveys the extent to which service doctrines as well as the Joint Doctrine of the Indian Armed Forces (JDIAS) capture and define the role of Artificial Intelligence (AI) in the Indian military. The analysis captures the limited view and non-existent view of AI within service and tri-service doctrine. A gap has emerged between the services' doctrinal pronouncements and the actual use of AI in some form in the three branches of the military. AI come in two variants at least—semi-autonomous and autonomous systems. This ensuing assessment is only a partial critique of how service doctrine see or ignore AI, the problem relating to the use of technology and doctrine is not unique to the services, but extends to other areas.

Introduction

What is the extent of Artificial Intelligence's role in the Indian Armed Services? As an emerging technology AI has assumed considerable significance in recent years for armed services across the world. The Indian armed services are integrating AI or AI-driven technologies before making any doctrinal shift or at a minimum doctrinal change has only partly paralleled the effort to adopt AI-related technologies and platforms. Indeed, individual service doctrines do not do justice to the extent to which AI-related technologies have already been integrated

Mr. **Kartik Bommakanti** is Fellow at Observer Research Foundation, New Delhi.

into each service. Where AI features in service doctrine, it is treated as a key aspiration for future military capabilities. AI is a future goal, rather than a capability, which *actually* exists in some form. This analysis explores why this is the case with the three service branches of the Indian military. It draws on open source material and existing service doctrines and tracks the evolution of AI-related capabilities despite the absence of a visible doctrinal articulation of AI's growing significance. AI, like all technologies, represents both continuity and discontinuity or change as far as the Indian armed services are concerned. One way to distinguish between autonomous and semi-autonomous weapons is by way of how these weapons relate to humans. The latter set of weapons such as the US-built Predator drones can fly autonomously to some point on the planet or a destination, but the release of their lethal ordinance against a target is entirely in the control of their human operator.[1] On the other hand, the former set of weapons system consisting of automated weapons systems encompasses lethality and destructiveness such as the Israeli Iron Dome missile defence system.[2] This system can fire without human intervention and pre-programmed to identify and destroy incoming missiles.[3]

As will be demonstrated below India's service-specific doctrines do not capture these distinctions and do not address fully the importance of AI and nor does the tri-service doctrine or Joint Doctrine of the Indian Armed Services of the Indian military address how AI might be relevant to military operations and missions. Any doctrinal engagement with AI is at best uneven in that either as an emerging technology its possibilities excessively exaggerated or inadequately appraised. AI is yet to fully mature and is still evolving. Indeed, it is an "emerging technology", which by definition means it is undergoing an "evolutionary" process, rather than a "revolutionary" process. Indeed, the very dictionary definition of the word "emerging" means "gradual appearance".[4] At best one may extend the meaning to include something that appeared 'unexpectedly'. Regardless, something that appears unexpectedly is not the same as being

'revolutionary'. AI has not arrived unexpectedly, however, the possibilities that AI can accomplish today in the defence domain has grown. The only 'revolutionary' technology if there has ever been is nuclear technology both in the form of civilian and military applications.

Given this background, this analysis proceeds in three parts. First, it surveys what semi-AI technologies or systems the India Army (IA) has integrated. The second and third sections do the same for the Indian Air Force (IAF) and the Indian Navy (IN). And based on the assessment it provides some reasons as to why doctrinal change has not kept with the integration of AI into the armed services order of battle.

Defining Doctrine and Where do the Armed Services' Doctrines Stand on AI

Doctrine can be defined as a "belief system" that enshrines for the military an institutional mechanism through which a military seeks to fight.[5] Doctrine is based on an institutional construct and expression of guiding principles for the military. Guiding doctrinal principles do not necessarily reflect what needs to be done in specific situations where operational flexibility and not doctrinal rigidity are the key to military success.[6] The purpose of doctrine is to educate military personnel about warfighting principles and enunciate them. There are three distinct types of doctrine: fundamental doctrine, operational doctrine and technological doctrine.

The doctrine generally is insensitive or displays imperviousness to technological change or sees change as an aspirational aim. This is especially true of fundamental military doctrine which can be framed in very abstract terms. After all, fundamental doctrine as the Indian Air Force doctrine from two and half decades stated: "[A] … character is that fundamental doctrine is relatively insensitive to political philosophy and technological change".[7]

This statement is valid as far as fundamental doctrine goes. However, contemporaneous operational doctrines also tend to mirror fundamental

doctrine. The point to underline here is: why doctrinal articulations of the Indian armed services have not consistently captured technological change and capabilities integrated into the Indian armed services. The purpose of this analysis is to test this claim that doctrines of the Indian armed services are not in complete alignment with existing operational practices and technological change.

Service doctrines of the Indian armed forces today, still tend to be either insensitive to technological change or see it as a goal to be attained and integrated for military operations. This is especially true for the IA, which has a fairly exaggerated view of AI's impact. Take specifically the Indian Army's Land Warfare Doctrine (IALWD) which states: "The Indian Army will continue to modernise to fight in a techno-centric combat environment which is likely to emerge in futuristic conflict scenarios due to revolution in key technologies like Artificial Intelligence…."[8]

This statement does not do adequate justice to the IA's own contemporary operational practice and past AI-related technological use. Indeed, the IA already deploys UAVs which are a partial form of AI. The notion AI is 'likely' to emerge in 'techno-centric environments' nor is AI 'revolutionary' because it has been around in some form for many decades illustrating the weaknesses of IA's doctrinal articulation on emerging technologies. Indeed, it is not a revolutionary, but an evolutionary technology. Yet this conceptual muddle is the primary source of the problem for the IALWD. In this regard, the IA more specifically is laggard in laying out what AI-related capabilities actually exist and what AI could do in the future. Indeed, one serving officer even went so far as to say recently "One can argue that the use of AI and other niche technologies by the Indian Army is only inevitable…."[9] This statement again is partly illustrative of the problems of the IA's officer corps assessment of AI. It is partially inaccurate given it conceives of AI as an ideal or the promising technology that is yet to be grasped. Further, it also ignores the historical and contemporary record of semi-autonomous systems that have been in

use in some form for decades by the IA and the other services. The only issue is and for that reason the above statement is accurate is the extent to which AI and especially its sub-fields such as Machine Learning (ML) have been applied to defence systems, logistics, personnel management and so on in the IA and across the Indian military as well as the extent of its penetration. Semi-autonomous weapons are partly AI-driven and some non-lethal military platforms are also semi-autonomous.

The other two Indian armed service doctrines especially the IAF doctrine[10] does recognise both the strengths and limitations of AI-related or autonomous platforms, but the IAF does not define them as AI or see the importance of AI as a 'revolutionary' technology as the IA's LWD for operations and missions. Indeed, the IAF's doctrine does not even use the term AI or even use Unmanned Aerial Vehicles (UAVs) but describes them as Remotely Piloted Aircraft (RPAs). To that extent, the IAF at least appears to have the most realistic appraisal semi-AI-based platforms such as UAVs can and cannot do.[11] IAF RPAs are geared for Intelligence, Surveillance and Reconnaissance (ISR) missions. These RPAs or partial AI capabilities in its inventory are confined to sensing missions, rather than for lethal missions or delivery of ordinance.

Whereas the maritime doctrine of the IN[12] does not mention, let alone discuss emerging technologies such as AI and unmanned or autonomous platforms and their influence on operations and military strategy. Although both the IAF and IN do not mention AI within their doctrines, let alone define AI rigorously, both services have been using AI-related capabilities for many years. Indeed, all three services are working fairly intensively to acquire and integrate them for a wider range of missions and applications. To that extent, the IALWD goes farther than the other two services in acknowledging the growing application of AI. Beyond individual service doctrines, what do we make of the tri-service doctrine? Does it acknowledge the importance of autonomous systems? The tri-service doctrine also suffers from the same lacuna.

Thus, none of the doctrines remotely go far enough in aligning existing AI capabilities with their doctrinal pronouncements. All the doctrines of the Indian armed services display indifference, misunderstanding of AI's promise for warfare and at one level historical amnesia about the use of AI-related technologies in some capacity by the Indian armed services.

Capabilities or their synonym military technologies fall into two categories. One is an elaborate support system focused on logistics. Take the case of Helmuth J. Moltke, the Prussian Chief of Staff's design and integration of a complex logistics support system to mobilise and transport troops and equipment that enabled Prussian military strength to be projected over vast distances.[13] Nevertheless, there are examples of AI's application from more recent military experience in the domain of logistics such as in the run-up to the first gulf war of 1991. The Dynamic Analysis and Re-Planning Tool (DART) is a case in example. It is widely considered a significant breakthrough in AI application for military logistics.[14] DART helped plan through an AI-based decision support system by enabling humans to better transport military equipment from Europe to Saudi Arabia for Operation Desert Shield.[15]

The others are centred on technologies such as heavy machine guns and artillery systems that are geared for lethal application. Although, our focus is primarily on the latter (including sensors) in the subsequent analysis, however, both are equally necessary for successful military outcomes. Some of the most promising AI technologies thus far have been in the sensor domain and weapons lethality. Sensing and lethal AI technologies encompass Unmanned Aerial Vehicles (UAVs), whose variants can be deployed for surveillance and reconnaissance missions as well as for mission involving the application of lethal firepower.[16] Lethal Autonomous Weapons (LAWs) for instance use AI.

Brief History of Indian Armed Services' Early Use of Semi-Autonomous Systems

The most visible manifestation or operational role of AI in the IA were target drones. The most well-known early drone was the KD2R5 target drone built and supplied by Northrop Grumman to the IA in the early 1970s.[17] Also known as the Northrop KD2R5 "Sheldruck" was among the first examples actually of a rudimentary form of AI, in that it was unpiloted used as target for anti-aircraft gunnery. It was subsequently used as target training practice for the IA's earliest Air Defence missile systems built by the British—The Tigercat.[18] The KD2R5 was equipped with a parachute recovery system and flew on autopilot with radio control.[19] Other American built systems included Northrop Grumman's Chukar II and Chukar III Tactical Expendable Drone Systems (TEDS) which were respectively fielded by the IAF and the IN. Chukar II also known as the MQM-74C was primarily built for the United States Navy (USN), but was exported to several North Atlantic Treaty Organization (NATO) as well as non-NATO states such as India. The Chukar II was recoverable by parachute and when deployed remotely commanded or automatically especially when the command link suffered damage.[20] Its variant the Chukar III was operated or used as an aerial target for anti-aircraft gunnery and for missile training.[21] There were other variants of the MQM-74 TEDS, it is unlikely or at least there is little extant evidence to suggest they were used by the Indian armed services specifically. Nevertheless, the Shuldruck and Chukar series of target drones clearly stand as early examples of the Indian armed services use of autonomous or semi-autonomous platforms. In subsequent years' American arms sales restrictions against India meant that there was very little defence cooperation that involved the supply of such systems.[22] Over the last two and half decades India has sourced autonomous systems from overseas vendors and started building its own systems. Let us now turn to the autonomous systems by each service branch of the Indian military. Readers should be cautioned in advance that the empirical evidence

furnished in the succeeding sections is not exhaustive, because of reasons space, the author has confined the list to a small subset of cases.

Indian Army and the use of Semi-Autonomous Systems

Since the mid-1990s, the Israelis have been the primary source of most of India's UAV systems and these unmanned platforms are geared for ISR and target acquisition missions.[23] The IA initially acquired the Searcher I and Searcher II from Israel Aircraft Industries (IAI) Limited and thereafter received the Israeli built Heron UAVs and has extensively used them.[24] It is the IA that was initially at the forefront of inducting UAVs into the service.[25] The Heron UAVs in the mountainous terrain of Jammu and Kashmir (J&K) as well as the Thar Desert in Rajasthan for surveillance missions. Exercise Sindhu Sudarshan or also known as Sudharshan Shakti which is a joint military exercise regularly conducted in the Thar Desert involving the IA and IAF since at least the early 2010s have involved the extensive of use UAVs.[26] Thus the AI used in the IA is largely confined to UAVs and most of it dedicated to ISR or sensing missions. In addition, the IA is also using UAVs to meet the "communications" requirements of the service in the areas of post-disaster medical evacuations and rescue operations.[27] There are efforts underway to incorporate several other types of UAVs. These consist of man-portable micro and mini-spy UAVs that can help with surveillance, direct and deliver artillery fire.[28] The IA is working on integrating UAVs for the infantry and the mechanised infantry units.[29] The service recently concluded a US$ 20 million contract with IdeaForge for the supply of an unknown number of drones directed ISR missions in demanding weather and harsh environmental conditions.[30] As of today, the IA primarily deploys and operates the Israeli built Searcher Mark I, Searcher Mark II and the Heron UAVs. All of the IA' UAVs are semi-autonomous in that they are not operated independently any human involvement or without any human loop. Nevertheless, they are built on AI technology and perform tasks and missions that are AI-driven.

In addition, there are efforts underway since at least 2016 to build an indigenous Tactical Communications Systems (TCS) by two Domestic Agencies (DAs). Each of these DAs are expected to build a prototype TCS over an 18-month period. Following development over 18 months, each of the TCS prototypes are to undergo technical evaluations by the IA.[31] The TCS, if and when validated for production and integration will help will generate 4G communication at 100 Mbps. In order to secure the network, the Defence Research and Development Organisation (DRDO)' Center for Artificial Intelligence and Robotics (CAIR) has been tasked with developing a native security solution to ensure network security.[32] Beyond UAVs, which are the most visible manifestation of using AI or semi-AI technology, the IA already uses the Daksha Remotely Operated Vehicle (ROV) for ordinance or bomb disposal built by the Research and Development Establishment (R&DE).[33] These ROVs have been operational at least since 2012. Bomb disposal units of the IA as well Indian paramilitary forces and Jammu and Kashmir police have also been using indigenously ROVs for nearly a decade. The IA has even sought under the "Make" category of the Defence Procurement Procedure (DPP) a Robotics Surveillance Platform (RSP) which is an AI-related or robotics system that is remotely operated to improve ground-based sensing system for detecting and tracking the movement of militants in built-up urban areas during Counter-Insurgency Operations (CIO).[34] The IA is also leasing for three years four MALE Heron surveillance drones from Israel to expand surveillance capabilities along the Line of Actual Control (LaC) with China.[35] Two of them are due for delivery in August 2021.[36] Beyond UAV and UCAV imports predominantly from Israel, there are native efforts as part of the DRDO's Research and Development (R&D) agenda to develop UCAVs such as the MALE UCAV the Rustom.[37] The latter has been under development for years. Following trials and validation, the IA at least hopes to deploy the Rustom or other UCAVs for each of its artillery brigades. In addition, the service expects to have

Loitering Missile Battery Systems and their associated ground segments for each Corps.

The foregoing is only a brief overview of AI's presence in aiding sensors and growing efforts on the part of the IA to adapt and integrate AI into weapons platforms for combat missions. Let us now turn to the IAF' efforts to integrate and deploy AI-related capabilities.

Indian Air Force and the use of Semi-Autonomous Systems

The IAF operates an estimated five squadrons of UAVs.[38] Although the precise number still remains classified.[39] These UAV platforms are a mixture of Searcher II Heron for ISR missions. The IAF has expressed interest in operating Unmanned Combat Aerial Vehicle (UCAVs) placing orders for the Harpy and Harop which are both built by Israel Aerospace Industries (IAI) and developed for lethal missions such as detection, tracking, attacking and destroying enemy's radar emitters and for Suppression of Enemy Air Defences (SEAD).[40] The IAF has also sought to re-design the Heron and Searchers in its existing inventory of UCAVs by testing additional capabilities and features. These include giving the Heron and Searchers to detect, attack and destroy the enemy's radar emission devices as well as SEAD capabilities. Extending and using UAVs to combat to perform lethal missions like several countries especially the United States, Israel, Russia and the Peoples Republic of China (PRC) is unsurprising. After all, India is proceeding with the purchase of 30 Predator B drones for 3 billion USD from US-based General Atomics.[41] The Predator-B UAVs are geared for lethal operations which following will give a confirmed remotely piloted autonomous capability for lethal missions. The IAF will also induct on lease the Heron TP which is a Medium Altitude Long Endurance (MALE) UAV that can carry out surveillance missions and deliver missile payloads. The Hindustan Aeronautical Limited (HAL) has concluded an agreement with Israel Aerospace Industries (IAI) Limited, to build the Heron TP UAV at HAL's facilities.[42] Thus, the IAF should

have UCAVs within the inventory in the not too distant future. The IAF for its part is moving or has proposed to develop a separate cadre to staff and execute UAV operations. The Ministry of Defence (MoD) and the Indian government have yet to sign off on a cadre specific UAV force.[43]

Indian Navy and the use of Semi-Autonomous Systems

The Indian Navy has been a leader in operating UAVs. UAVs have been involved in maritime surveillance, traffic control and anti-piracy operations and the defence of Exclusive Economic Zones (EEZs). As of today, the IN's fleet air arm has three UAV squadrons which are geared for ISR missions.[44] An additional UAV squadron consisting of Searcher II and Heron UAVs was established in Behala in West Bengal to track Chinese submarine movements in the Bay of Bengal and intrusions into India's EEZ.[45] The entirety of India's UAV squadrons are land-based and each of them are operated by their respective command headquarters. In addition, in order to execute carrier-based missions, the IN is working intensively to integrate UAVs that are ship-based and rotorised that meet the requirements of higher endurance and payload carrying capacities. These UAV's will have Over-the-Horizon (OTH) carrying capacities, battle damage assessment capabilities and communications capabilities.[46] There is also a proposal pending before the Indian government to acquire 10 ship-based drones to enhance the ISR missions against enemy navy vessels.[47] The IN like the other services is also considering the induction of combat UAVs. Beyond UAVs' the IN's Weapons and Electronics Systems Engineering Establishment (WESEE) has been involved in "interfacing Russian equipment with Western data" as well as the reverse.[48] For instance, WESEE was responsible for ensuring Russian missiles could understand and accept the inputs and commands of German Anshutz gyros for navigation.[49] This involved a form of automation. WESEE was the first entity in India to recognize that fairly obsolete computers could be used for converting Western data and made usable by Russian weapons

in the IN. Although not all of WESEE's native efforts were successful, but it was a harbinger of change for interfacing. In 2019, the IN under the aegis of WESEE invited bids to set up an AI and ML laboratory for its Combat Management System (CMS).[50] The purpose of the bid is to set up infrastructure and train personnel on-site for a period of 4 months. This does suggest that the IN leadership is alive to the importance of AI and ML.

Assessing the State of AI in India and Military Doctrines

In the foregoing, we have briefly, but not exhaustively reviewed the use of AI-related or partially AI-driven capabilities deployed or planned. All the operational UAVs in the three service branches of the Indian military are remotely piloted and the ground-based robotic systems for bomb disposal are also remotely operated by humans. India armed services use semi-autonomous airborne systems overwhelmingly for sensing missions. In a nutshell, the Indian armed services have primarily or overwhelmingly used and deploy are semi-autonomous systems. The armed services and more generally the Indian defence establishment's investments in purely autonomous systems that are strongly AI-driven have hardly matched that of the advanced industrialised states such as the USA, Japan, Europe and China. As Lieutenant General R.S. Panwar observed: "In India, however, the power of AI has hardly been exploited in defence applications, be it weapons systems, surveillance applications, decision support systems, big data analytics, etc. Existing robotic systems deployed for defusing landmines and other explosive devices have limited autonomy, and do not have a strong AI component".[51]

Existing platforms of all the three armed services that use AI are essentially semi-autonomous. Thus the cognitive exertion on the part of soldiers or personnel for the use and operation of existing defence systems across the services is still greater. Amidst all the promise of AI, existing service doctrines have not fully acknowledged the *actual* use of

AI even in its partial form. This is where a gap has developed between what has "emerged" and what is "emerging" in the area of AI and its subfields. Their applicability and limits, as one former senior IA officer recognised, such as ML, Deep Learning (DL), Augmented Reality (AR), Virtual Reality (VR) and Deep Fakes, Big Data and so on have yet to be fully understood and determined.[52] Consequently, it is reasonable to assume and infer the services have ended up producing doctrines that are muddled interpretations of AI. In the case of JDIAS, the mere mention of AI is visibly absent.

Should we single out the Indian armed services for criticism for the failure define terms rigorously, draw clear distinction between autonomous and semi-autonomous platforms and weapons system and capture with greater clarity technological change? In part, this may valid. After all India's leadership set out to release the country's nuclear doctrine long after it actually started surreptitiously improving weapons and acquired a "nonweaponised" nuclear capability in 1989-1990 and also continued to test missile systems.[53] Indeed, a Draft Nuclear Doctrine (DND) did not become publicly available until 1999 following the Pokhran nuclear tests of 1998.[54] Eventually, an official nuclear doctrine was released in 2003 and stands as a vivid example in that some capabilities were acquired before doctrinal principles were officially articulated and released publicly about the use and non-use of nuclear weapons.[55] Thus, this is not a unique experience for the Indian armed services as the Indian nuclear doctrine offers a historical precedent and parallel.

Nevertheless, each of the services needs to pay more attention to updating service doctrines as well as the tri-service doctrine. As tri-service cooperation grows and integrated commands crystallise there will be a greater need and imperative to harmonise the operational practices, missions and technological changes with doctrinal pronouncements of the armed forces.

Conclusion

It is fairly obvious from the foregoing, India's armed services have struggled to bridge the divide between doctrine and technology. Updating doctrine through periodic reviews is a mandatory requirement for all three armed services. Understanding the strengths and limits of emerging technologies such as AI is also essential. Service doctrines require constant engagement with emerging technologies, but as tri-service cooperation has increased the JDIAS needs to better capture, understand and layout the applicability to military missions, operations, command and control, logistics and weapons systems. Semi-autonomous platforms have been used extensively by the Indian armed services and thus, AI has undergone some form of diffusion and use. The Indian armed services are unique: AI-related capabilities are being integrated and developed or in use, even as doctrine has been laggard in capturing shifts in the adoption of AI. The Indian military leadership writ large and the large mass of retired officers from the three services recognise the importance of AI. However, service doctrines either misconstrue AI significance and in other instances do not provide adequate guidance to military commanders and the officer corps more generally about technological change that AI represents.

Notes

1. Jean Francois Caron (2020), "Defining semi-autonomous, automated and autonomous weapons in order to understand their ethical challenges", *Digital War 1*, pp. 173-174.
2. Ibid.
3. Ibid.
4. See definition "emerging", Thesaurus, Merriam-Webster. Available online at https://www.merriam-webster.com/thesaurus/emerging, accessed on February 5, 2021.
5. Aaron P. Jackson (2013), *The Roots of Military Doctrine: Change and Continuity in Understanding the Practice of Warfare,* Fort Leavenworth, Kansas: Combat Studies Institute Press, pp. 4-6.
6. Ibid.
7. *Doctrine of the Indian Air Force,* Air Head Quarters, New Delhi, 1997 (amended edition).
8. *Indian Army Land Warfare Doctrine-2018,* Army Headquarters, New Delhi, 2018.
9. Lt. Col. Akshat Upadhyay (2021), "Engagement or Estrangement: Gauging Indian Army's Relationship with the Emerging Technologies", Issue Brief 272, Center for Land Warfare

Studies, February 2021, p. 5. Available online at https://www.claws.in/publication/engagement-or-estrangement-gauging-indian-armys-relationship-with-the-emerging-technologies/, accessed on February 15, 2021.

10. *Basic Doctrine of the Indian Air Force Doctrine, 2012,* Indian Air Force, Air Headquarters, New Delhi, pp. 89-90.
11. Ibid.
12. *Indian Maritime Doctrine: Indian Navy,* Naval Strategic Publication, 1.1., Indian Naval Headquarters, New Delhi, 2016.
13. Daniel J. Hughes (1993), *Moltke of the Art of War: Selected Writings,* New York: Ballantine, pp. 109-111.
14. Sara Reese Hedberg (2002), "DART: Revolutionizing Logistics Planning", *IEEE Intelligent Systems,* May/June 2002, p. 81.
15. Ibid.
16. For lethal AI use see for example, Marcus Weisgerber (2017), "The Pentagon's New Artificial Intelligence Is Already Hunting Terrorists", *DefenseOne,* 21 December 2017. Available online at https://www.defenseone.com/technology/2017/12/pentagons-new-artificial-intelligence-already-hunting-terrorists/144742/, accessed on February 5, 2021.
17. Aditi Malhotra and Rammohan Vishvesh (2014), "Taking to the skies – China and India's quest for UAVs", *Journal of the Indian Ocean Region,* Vol. 10, No. 2, p. 171.
18. M.K.K. Iyer, "A Shot in the Arm", *Force,* http://forceindia.net/cover-story/a-shot-in-the-arm/.
19. "Northrop KD2R5 "Sheldruck" Basic Training Target Drone", Western Museum of Flight, Torrance: CA. Available online at https://www.wmof.com/kd2r5.htm, accessed February 15, 2021.
20. "Northrop MQM/BQM- 74 *Chukar".* Available online at http://www.designation-systems.info/dusrm/m-74.html, accessed on February 10, 2021.
21. Ibid.
22. Aditi Malhotra and Rammohan Vishvesh (2014), "Taking to the skies", n. 17, p. 171.
23. Ibid.
24. P.K. Chakravorty (2018), "Employment of Unmanned Aerial Vehicles (UAVs) and Need for Unmanned Combat Aerial Vehicles (UCAVs) in the Indian Army", *Indian Defence Review,* 15 June 2018, at http://www.indiandefencereview.com/spotlights/employment-of-unmanned-aerial-vehicles-uavs-and-need-for-unmanned-combat-aerial-vehicles-ucavs-in-the-indian-army/, accessed on February 7, 2021.
25. Ibid.
26. Sushant Kulkarni (2019), "Sindhu Sudarshan desert exercise: Testing ground capabilities, messages for adversaries", *The Indian Express,* 9 December 2019. Available online at https://indianexpress.com/article/cities/pune/desert-exercise-testing-ground-for-capabilities-message-for-adversaries-6156363/, accessed on February 6, 2021. Also see, Aditi Malhotra and Rammohan Vishvesh (2014), "Taking to the skies", n. 17, p. 175.

27. P.K. Chakravorty (2018), "Employment of Unmanned Aerial Vehicles", n. 24.
28. Rajat Pandit (2013), "Indian armed forces building deadly drone arsenal, also want combat UAVs", *The Economic Times,* 5 February 2013. Available online at https://economictimes.indiatimes.com/news/politics-and-nation/indian-armed-forces-building-deadly-drone-arsenal-also-want-combat-uavs/articleshow/18342256.cms?from=mdr, accessed on February 6, 2021.
29. Aditi Malhotra and Rammohan Vishvesh (2014), "Taking to the skies", n. 17, p. 175.
30. "Indian Army signs a pact to procure high altitude drones from ideaForge for $20 million", *The Economic Times,* 14 January 2021. Available online at https://economictimes.indiatimes.com/news/defence/indian-army-signs-a-pact-to-procure-high-altitude-drones-from-ideaforge-for-20-million/articleshow/80265458.cms?from=mdr, accessed on February 8, 2021.
31. Vivek Raghuvanshi (2016), "Indian Prepares to Kick-Start Delayed Tactical Comms Project", *DefenseNews,* 13 July 2016. Available online at https://www.defensenews.com/global/asia-pacific/2016/07/13/india-prepares-to-kick-start-delayed-tactical-comms-project/, accessed on February 18, 2021.
32. Ibid.
33. "Indian Daksh ROV Enters Service", LiveFistdefence.com, 30 January 2012. Available online at https://www.livefistdefence.com/indian-daksh-rov-enters-service/, accessed on February 7, 2021.
34. "Indian Army Wants 500 Anti-Terror Robotic Vehicles in Kashmir", livefistdefence.com, 18 November 2019. Available online at https://www.livefistdefence.com/indian-army-wants-500-anti-terror-robotic-vehicles-in-kashmir/, accessed on February 7, 2021.
35. "India Set to Get Four Heron Long-endurance Drones Israel", News18, 26 May 2021. Available online at https://www.news18.com/news/india/india-set-to-get-four-heron-long-endurance-drones-from-israel-3780212.html, accessed June 1, 2021.
36. Ibid.
37. A.K. Sachdev (2019), "Unmanned Platforms in the IAF: The Need to Bolster", *Indian Defence Review,* Issue Vol. 34, January-March 2019, http://www.indiandefencereview.com/news/unmanned-platforms-in-the-iaf-the-need-to-bolster/#:~:text=The%20first%20IAF%20UAV%20Squadron,squadrons%20and%20a%20Tech%20Flight, accessed on February 5, 2021.
38. Aditi Malhotra and Rammohan Vishvesh (2014), "Taking to the skies", n. 17, p. 175.
39. A.K. Sachdev, "Unmanned Platforms in the IAF": The Need to Bolster", n. 37.
40. Aditi Malhotra and Rammohan Vishvesh (2014), "Taking to the skies", n. 17, p. 175.
41. Sudhi Ranjan Sen (2020), "India to buy 30 US Predator drones for $3 bn to counter China, Pakistan", *Business Standard,* 11 March 2020. Available online at https://www.business-standard.com/article/current-affairs/india-to-buy-30-us-predator-drones-for-3-bn-to-counter-china-pakistan-121031000515_1.html, accessed on February 15, 2021.
42. Manu Pubby (2021), "HAL to make advanced armed UAVs with Israeli Co.", *The Economic Times,* 3 February 2021. Available online at https://economictimes.indiatimes.com/news/defence/hal-to-make-advanced-armed-uavs-with-israeli-co/articleshow/73887330.

cms?from=mdr, accessed on February 7, 2021. For a brief overview of the Heron TP system see, "Heron TP: MALE Unmanned Aerial System (UAS)". Available online at https://www.iai.co.il/p/heron-tp, accessed on February 7, 2021.

43. A.K. Sachdev (2019), "Unmanned Platforms in the IAF", n. 37.
44. Aditi Malhotra and Rammohan Vishvesh (2014), "Taking to the skies", n. 17, p. 176.
45. Jayanta Gupta (2013), "Behala to house UAV squadron", *The Times of India,* 18 July 2013. Available online at https://timesofindia.indiatimes.com/city/kolkata/Behala-to-house-UAV-squadron/articleshow/21132531.cms, accessed on February 8, 2021.
46. Rikeesh Sharma (2013), "Transformation of Indian Naval Aviation", *Journal of Defence Studies,* Vol.7, Issue 1, p. 40.
47. "Indian Navy to urgently buy 10 ship-based drones", *Livemint*, 14 August 2020. Available online at https://www.livemint.com/news/india/indian-navy-to-urgently-buy-10-ship-based-drones-11597409699622.html, accessed on February 7, 2021.
48. See K. Raja Menon (2012), "Technology and Indian Navy", in Harsh V. Pant (ed.), *The Rise of the Indian Navy: Internal Vulnerabilities, External Challenges,* Surrey: Ashgate Publishing Limited, pp. 90-92.
49. Ibid.
50. "India navy setting up AI and ML lab for combat management system", *Defence.Capital,* 15 November 2019. Available online at https://defence.capital/2019/11/15/india-navy-setting-up-ai-and-ml-lab-for-combat-management-system/, accessed on February 5, 2021.
51. Lt. Gen. R.S. Panwar (2018), "Artificial Intelligence in Military Operations: A Raging Debate, and Way Forward for the Indian Armed Forces", USI Monograph, No. 2, United Service Institution of India (USI), p. 34.
52. Lt. Gen. S.P. Kochhar (2019), "Use of Technology Including Artificial Intelligence (AI) and Robotics to Enhance War Winning Capabilities", *Journal of the United Service Institution of India*, Vol. CXLIX, No. 618, October-December 2019, pp. 528-529.
53. George Perkovich (2000), *India's Nuclear Bomb: The Impact On Global Proliferation*, New Delhi: Oxford University Press, pp. 293-317.
54. Ministry of External Affairs (1999),"Draft Report of National Security Advisory Board on Indian Nuclear Doctrine", 17 August 1999. Available online at https://mea.gov.in/in-focus-article.htm?18916/Draft+Report+of+National+Security+Advisory+Board+on+Indian+Nuclear+Doctrine, accessed on February 7, 2021.
55. Prime Minister's Office (2003), "Cabinet Committee On Security Reviews Progress In Operationalizing India's Nuclear Doctrine', 4 January 2003. Available online at https://archive.pib.gov.in/archive/releases98/lyr2003/rjan2003/04012003/r040120033.html, accessed on February 7, 2021.

Kashmir Militancy After 370: An Assessment of Pakistan's Proxy War

Abhinav Pandya

Abstract

India's peaceful abrogation of Article 370 was a major geopolitical setback and an intelligence failure for Pakistan. In one stroke, India severely dented Pakistan's complex and layered infrastructure of militancy. Contrary to expectations when there was no widespread backlash against it, the ISI-masterminds pressurised the local terrorist organisations and Islamist groups to execute a large-scale terror attack or orchestrate a massive civil uprising. However, when they failed, clueless and perplexed Pakistan made drastic strategic and tactical changes in running Kashmir's militancy to gain its lost ground. The most significant change was to minimise the role of local terrorist groups like Hizbul Mujahidin (HM) and strengthen the foreign terrorist groups like Lashkar-e-Taiba (LeT), Jaish-e-Muhammad (JeM), and Al Badr as the leading groups. While to elude the Financial Action Task Force (FATF) scrutiny, many front organisations were created such as the LeT-led The Resistance Front (TRF) that emerged as the most active offshoot, claiming most terror attacks after 370. Another significant development is the emergence of Turkey as a critical stakeholder in Kashmir's conflict theatre- working on multiple fronts ranging from militancy, diplomacy to inciting civil unrest. Given this context, the paper discusses and critically analyses the strategic and tactical changes ushered in by Pakistan in Kashmir's proxy war after the abrogation of Article 370.[1]

Mr. **Abhinav Pandya**, MPA from Cornell University, is the founder-CEO of Usanas Foundation, India.

Introduction

On 25 May 2020, Islamabad's (Pakistan) Deputy Commissioner's Twitter handle informed of a cylinder blast in an abandoned car in the street at G-10/2, in Islamabad.[2] Reportedly, the residence of Syed Salahuddin, 'designated global terrorist' (by the US State Department),[3] supreme commander of Kashmir's banned terrorist group Hizbul Mujahideen and also the chief of the United Jihad Council (UJC), an ISI-controlled umbrella organisation for all militant groups in Kashmir, which manages the nuts and bolts of militancy and separatism in India-administered Kashmir.

The author's informed interlocutors in Kashmir and Indian intelligence agencies confirmed that the ISI orchestrated the attack to threaten Salahuddin, of dire consequences if he did not refrain from publicly damning ISI in Pakistan Occupied Kashmir (PoK).[4] However, due to Pakistan's tightly controlled media, the event more or less escaped the global counter-terrorism analysts' critical scrutiny.

A closer analysis signals towards alarming strategic and tactical changes in Pakistan's proxy war in Kashmir. After India abrogated Kashmir's quasi-autonomous status on August 2019, Pakistan has been giving a big push to Kashmir's militancy. However, in the new strategy, the role and relevance of the local terrorist groups like HM stand diminished. In the post-370 militancy scenario, the foreign terrorist groups, primarily ISI's core assets, such as JeM and LeT, have emerged as the most powerful actors in Kashmir, marginalising the local groups such as the HM. Furthermore, global state and non-state jihadist actors such as Turkey, Iran, and the Taliban are emerging as critical players in shaping the contours of Kashmir's terrorism. This brings into perspective the changing dynamics of the Kashmir conflict and in light of this, the paper seeks to discuss and critically analyse the strategic and tactical changes ushered in by Pakistan in Kashmir's proxy war after the abrogation of Article 370.

Abrogation of Kashmir's Special Status—A Shocker to Pakistan

Over the last three decades of militancy, Pakistan established a robust constituency in Kashmir, rooted in a network of its proxy terrorist groups (both local and foreign) and their Over Ground Worker (OGW) network, separatist Hurriyat, radical Islamist organisations like Jamaat-i-Islami, Hawala operators, Human rights activists, mainstream politicians, media and the charity organisations.[5] This well-knit and internally cohesive constituency has also enabled Pakistan to build, sustain and develop its highly complex and sophisticated intelligence network with an intense penetration in the state administration and intelligence agencies. Such a complex and layered intelligence set-up provided ISI with timely inputs on the existing and emerging social, political, and security-related developments.

However, in August 2019, its 'deep-state' failed when India shocked Pakistan by abrogating Article 370 of the Indian Constitution, which gave a semi-autonomous status to Kashmir.[6] India's Kashmir move was not only a massive intelligence failure but also a significant blow to ISI's terror juggernaut in Kashmir, which it had built systematically and strategically over the last three decades. Contrary to Islamabad's expectations, there was no popular revolt and social unrest. Except for a few minor incidents of protests and civilian deaths, the Kashmir valley remained peaceful and cooperative in implementing the abrogation decision on the ground.

Reasons for the Peace after August 2019

After the encounter-death of a celebrity militant Zakir Musa of Ansar Ghazwat-ul-Hind, Al Qaeda's local affiliate, fatigue was setting in among the local militants. The ordinary people in the valley had long become weary of conflict.[7] Besides, they also showed symptoms of massive disillusionment and even hatred for Pakistan—realising that Pakistan was shedding the blood of local youth for its geopolitical interests.

In this perspective the factors that called for peace after 5 August are primarily two-fold: First, to note, in the five years that preceded Delhi's historic decision, Indian security forces had launched an aggressive drive against militancy and killed a record number of militants, the majority of whom were untrained locals, primarily motivated by religious factors rather than the secular separatist ideology.[8] On the other hand, Pakistan was content with the growing number of locals joining militancy and getting killed in encounters, in turn aggravating the hatred for India, which it thought was strengthening its own constituency. It was also economically cheaper and less risky as due to enhanced border vigilance and barbed-wire fencing, infiltrating terrorists from PoK had become a challenging task. However, Pakistan failed to perceive that along with the growing hatred for India's security forces, its own sleazy game was getting exposed to the local populace- making a significant dent in the Pro-Pakistan narrative.

Second, along with India's kinetic approach against militancy, its systematic and organised crackdown on the terror-financing network and radical Islamist organisations also ruptured militancy's infrastructure. In this domain, in particular, certain measures such as ban on the Line of Control (LoC) trade, reportedly one of the major sources of terror financing employed for smuggling cash, narcotics, and weapons, in the valley, National Investigation Agency's (NIA) offensive against Hawala operators and separatist leadership, and the Ministry of Home Affairs' (MHA) ban on Jamaat-i-Islami, the central feeder organisation to terrorist groups, acted effectively. All these measures were immensely helpful in maintaining peace for almost a year-and-a-half in Kashmir after repealing its special status. As noted, in the period 2018-2020, there was a decline in the number of terrorist incidents (5 per cent) and sponsored stone-pelting protests (75 per cent), which has been the most critical law and order challenge since the 2008 Amarnath row agitation.[9]

What Prompted the Change in Strategy and Tactics?

The long and disturbing silence following Delhi's Kashmir move was indeed a puzzle for intelligence and security affairs analysts in Delhi and Srinagar. However, for Pakistan, it was turning into a nightmare. Prime Minister Imran Khan's attempts to rally the global diplomatic community against India on Delhi's '5 August' decision ended in a disaster. The majority of the Arab nations and the western world supported India, and Pakistan was left with allies like Turkey, questionable for its secret ties with terrorist groups, and to some extent, Malaysia. Having failed in global diplomatic outreach, Pakistan intensified ceasefire violations after the abrogation, to get global attention. As noted, the number of ceasefire violations increased from 1629 (2018), 3168 (2019) to 2027 (until 10 June 2020).[10]

Despite its well-planned motivation props such as global propaganda in the UN bodies and continuous ceasefire violations on the border with India, its proxies failed to galvanise the people into public revolt or even execute a large-scale terror attack. The ISI masterminds felt that Kashmir might slip out of Pakistan's grip, which means a geopolitical catastrophe. Kashmir is a jugular vein of the Pak army-quintessential to justify its disproportionate share of the budget and overweening control over the polity, economy, and society.[11] Further, Kashmir is also a potent symbol in popular perception- giving the Islamic republic's collective consciousness a much-needed threat to unite in an overall socio-political milieu marred by threatening fault-lines in the form of sectarian rifts and separatist insurgencies. On the Indian side, Indian political leaders[12] were raising the pitch on PoK,[13] in parliamentary debates on Article 370, maybe for entirely domestic gains; however, it led to growing suspicions and fears about a potential Indian offensive into PoK.

Pakistan could not afford to let Kashmir slip out of its grip. However, Islamabad knew it well that a full-blown conventional war with India would never be in the former's interest. Even with both countries having

nuclear weapons, the odds are heavily in India's favour. With regard to the nuclear question, Pakistan's top-level military leadership believes it to be futile to indulge in a nuclear misadventure.[14] The reason being, after Pakistan's strike, India would be left with many cities; however, Pakistan will be faced with disproportionate retaliation as per India's nuclear doctrine, resulting in Pakistan's complete annihilation. Hence, a proxy war against India continues to remain the best bet given India's limitations in launching a full-fledged military offensive.

Even though, after 2014, the Modi government has given clear indications of an aggressive force posture and heavy retaliation through Uri surgical strike (2016) and Balakot air-strike (2019) after the Uri fedayeen attack and Pulwama suicide-bombing; respectively, it has not deterred Pakistan from abetting terror in India. It is so because Pakistan knows that India cannot respond to every terror attack with an air strike inside its territory. Anything above that is likely to escalate into a full-blown war involving other powers like China, the US and Turkey. India is least likely to precipitate such a scenario. Hence, proxy war remains a time-tested and most effective strategy; however, it had to be revitalised and improvised because India's rigorous communication and security lockdown made it extremely difficult for the HM, and the Hurriyat Conference, the local non-violent separatist group working under the firm grip of ISI, to organise terror attacks and civilian protests on a large scale. Such a realisation unleashed a significant change in the strategy and tactics of a proxy war.

The change was initially evident when ISI threatened to choke HM's finances and weapons' supplies when UJC led by Syed Salahuddin failed to organise widespread protests and terror strikes in Kashmir. The ISI gives Rs 3 crore to HM each season for operational expenses.[15] The prospects of losing such a hefty funding source were undoubtedly a setback for Syed Salahuddin and his HM.[16] The rift widened after the encounter death of Riyaz Naikoo in May 2020, Salahuddin's deputy and HM commander

in Kashmir, who was eluding the security forces for the last five years. In his funeral prayer rallies in PoK, Salahuddin said that Indian forces had the upper hand in Kashmir. Reportedly, he even ranted against ISI in his public speech during the funeral prayer; however, its recording is not available for reasons more than obvious.

As a result, ISI's Kashmir desk began prioritising foreign terrorist groups like LeT and JeM and sidelining Salahuddin from its core meetings convened to chart out the strategy for militancy in post-370 Kashmir. Reportedly, in some meetings, there were heated arguments between Salahuddin and his ISI-handlers. Finally, the story ended with the cylinder blast outside his residence. To which, the message was clear

- The local groups like HM are redundant for ISI because they failed to deliver after Article 370.
- The tone and tenor of the proxy war would undergo massive changes.

A Brief Overview of Pakistan's New Strategy

In the new strategy, foreign terrorist groups such as LeT and JeM are the pillars of militancy in Kashmir. For all the operational aspects, they will be the primary force. These groups are much better trained and disciplined vis-à-vis the HM cadres. They are under the firm control of the ISI as their leadership and cadres are mostly from Pakistan. ISI has always reposed higher trust levels in the foreign terrorist groups mentioned above vis-à-vis Kashmiri terrorist groups such as the Jammu Kashmir Liberation Front and HM. In 2003, when the Indian Kashmir-based HM commander Majid Dar dared to challenge the ISI-backed Salahuddin,[17] he was killed by unidentified gunmen, allegedly at the behest of ISI.[18]

With the US all set to leave Afghanistan, there is a strong likelihood of Taliban and IS-KP (Islamic State of Khorasan Province) fighters joining ISI's Kashmir-centric terrorist groups. LeT has strong ties with the Haqqani network, and both have conducted many joint terror operations in Afghanistan.[19] In the past, LeT also trained foreign fighters from the

United States, Chechnya, and many European countries, joining Al Qaeda.[20] Most recently, Afghan Security Forces (NDS) arrested Aslam Farooqui, the IS-KP chief and the mastermind of the attack on the Sikh gurudwara in Kabul, killing 27 civilians (March 2020).[21] Interestingly, the NDS interrogations revealed that Farookhi was a former LeT cadre and had strong connections with the ISI.[22] The other outfit, JeM,[23] believes in the hardline Deobandi Islam to which the Taliban subscribes.[24] Recently, in a raid at Taliban training camp in Nangarhar, NDS killed ten JeM cadres, clearly bringing forth the ties between them.[25]

Reportedly, in the February 2020 meeting at Lakhwi's (Lakhwi is the deputy of the UN proscribed terrorist Hafiz Saed (carries a bounty of US$ ten million) in LeT and an alleged mastermind of Mumbai attacks 2008) residence, the ISI's Kashmir desk officials met all the militant commanders.[26] Most interestingly, Bakht Zameen, the chief of Al Badr, was also invited to the meeting mentioned above.[27] Al Badr terrorist group was active in Kashmir in the 1990s. However, by the mid-2000s, it became defunct in Kashmir. However, it was active in the Af-Pak border region, where it developed robust links with the Haqqani group, the Taliban's sword arm. Reviving Al Badr in Kashmir clearly brings forth the essence of the new strategy, i.e., strengthening the foreign terrorist groups.

Further, as per the information provided by a senior Jammu and Kashmir Police official, on the condition of anonymity, the ISI handlers did not allow Salahuddin to participate in that meeting.[28] In the meeting, it was decided to give a big push to the infiltration of terrorists into the Indian side of Kashmir and shift cadres from Afghanistan to Kashmir.[29] Reportedly, Pakistan's intelligence set-up promised all kinds of logistical, operational, and financial support for the large-scale infiltration bid. The news reports of 450 terrorists (April 2020) waiting in the PoK launch pads to enter into Indian Kashmir confirm the implementation of the decisions taken in the meeting mentioned above.[30] Later, Indian

intelligence agencies confirmed the interception of Pashto conversations in PoK launch-pads, suggesting a substantial likelihood of Pakistan shifting jihadist cadres from Afghanistan to Kashmir.[31]

Notably, the foreign terrorist cadres of LeT and JeM are much better trained and skilled than the cadres of the local terrorist groups like HM. Also, they have a very extremist outlook and higher levels of religious motivation vis-à-vis the local terrorists. It is pertinent to mention that JeM executed some of the most lethal fidayeen attacks in India, such as the most recent Pulwama suicide bombing (February 2019), in which 42 soldiers died, and India and Pakistan came on the verge of a full-blown war. Before that, Jaish also conducted deadly fidayeen attacks in Uri, Pathankot, and the 2001 attack on the Indian parliament, which also brought the two nations very close to war. Jaish's processor Harkat-ul-Mujahidin was responsible for hijacking the Indian airliner IC-814.[32] In return, India released three terrorists, one of which Maulana Masood Azhar went on to lead JeM and continues to give nightmares to Indian security forces. Similarly, LeT has also perpetrated some of the deadliest terror attacks, including the Mumbai attacks in 2008, resulting into the death of 166 people, which included many Americans.

Changes in Tactical Matters to Avoid the FATF Scrutiny and Optimisation of Resources

- Pakistan is creating front organisations, as Pakistan's ties with LeT, JeM and Al Badr are an open secret. As a result, LeT and JeM have faded into the background, and most of the terrorist attacks have been claimed by the front organisations.
- They are deliberately given secular names to portray them as local and homegrown militant groups against the abrogation of Article 370 to dominate the global propaganda theatre in the war of narratives. Pakistan also intends to convincingly appeal to the international human rights and advocacy groups by secularising the

names of the new groups. The idea is to project a secular image of the Islamist separatist movement in Kashmir to derive credibility in global forums.

- It can be reasonably argued that Pakistan is sidelining the local groups like HM. However, it does not imply that Pakistan is refraining from recruiting local cadres. In fact, the new entities with secular sounding names like TRF and Jammu and Kashmir Pir Panjal Peace Forum have been created with the purpose of expanding the recruitment base, attracting more and more local boys. However, the leadership and decision-making powers will be vested with foreign terrorist groups.
- These groups make excellent social media use to assert their presence, motivate youth to join them, sustain and strengthen resentment as a dominant narrative and run psy-ops to demoralise the security forces. This is a part of Pakistan's larger information warfare against India (outlined in Pakistan's 2020 Green Book), to keep the global attention focused on Indian Kashmir and to severely dent India's goodwill and development efforts in Kashmir with fake videos, twitter posts, thereby incite the local population into unrest.[33]
- They have bypassed the communication lockdown by using VPN (Virtual Private Networks) systems, using telecom companies' private networks. Reportedly, some FTs also carried Satsleeve devices which can convert a normal mobile phone into a satellite-based internet phone.[34] Militant cadres use customised and highly advanced encrypted communication apps, mostly coming from Pakistan and Turkey. Initially, they were using the Russian application Telegram, trusted for its privacy features. Later, Turkish apps such as BiP provided a reliable channel as its servers are in Turkey, a friendly nation. They also use Conion, a TOR (The Onion Router) based application.[35] In TOR-based applications, a small group of three to four people can develop their servers, making it extremely challenging to break

into their systems. Apart from these, there are many customised and advanced applications developed by ISI's cyber experts. It is not easy to detect them because they are not even on Google Play Store. Skype and Calculator are two examples of such encrypted communication applications. Skype has the advantage of working on VoIP (Voice over Internet Protocol), enabling the user to make regular calls to landline numbers or mobile numbers.[36]

- They have specifically targeted non-local labourers, truck drivers, traders, and those who are getting domicile certificates to create an impression that the resistance is against the end of special status and plans of altering the demography of the region. However, the underlying objectives are to build a massive popular resistance against the abrogation of Article 370 by getting the sympathies of a larger audience, including relatively secular and liberal-minded individuals who would not have come strongly in support of a purely religious objective, and strengthen the narrative of Kashmir militancy being a local and homegrown resistance, in the international narrative and propaganda domains.
- In the new strategy, the militants joining the terrorist groups are not uploading their pictures on social media, which was a practice before 5 August 2019. This is to keep themselves off the radar of SFs and hinder intelligence gathering on them. Further, the purpose is to tire and frustrate the SFs by projecting the militancy as leaderless, structure-less, and spontaneous. Also, running militancy through such hybrid, vague, and scattered terror outfits creates smokescreens that hamper the intelligence gathering.
- In the terror attacks, the new outfits have focused on killing security forces personnel, including senior officers, which is damaging for the morale of SFs. Lately, the militants have conducted many terror attacks in Srinagar city, some even close to VVIP areas, during foreign diplomats' visit. Such audacious attacks demonstrate their capabilities,

intelligence penetration, and competence and also demoralise the SFs. They also serve the purpose of conveying to the international community that India's claims of restoring normalcy and peace in Kashmir are hollow.

- The nature of attacks, combat skills, and marksmanship displayed by terrorist cadres belonging to these front organisations suggest that they have highly trained foreign terrorists from Pakistan and Afghanistan. In one of the attacks on the Central Reserve Police Force (CRPF) camp, the militants took an accurate headshot, and in the Handwara (February 2020) encounter, officers of the rank of Colonel and Major were killed. Such expertise comes only after rigorous training, under the supervision of the Pak army's Special Forces.
- Besides, in some of the encounters in 2020, advanced weaponry has been recovered. In one of the recent encounters in the Kulgam district of South Kashmir, the police recovered a Pika machine gun, a significant departure from the past.[37] In Kashmir, mostly terrorists have been using AK 47 rifles, Self-Loading Rifles (SLRs), Chinese pistols, and Pakistan's Shaheen pistol. The militant groups have been found with armour piercing bullets.[38] Also, the presence of trained snipers cannot be ruled out.

The Resistance Front—A New Wing of LeT

Some of the prominent front/virtual terrorist groups include The Resistance Front, People's Anti-Fascist Front, Jammu and Kashmir Pirpanjal Peace Forum, Lashkar-i-Mustapha, Kashmir Tigers, and Muslim Janbaz Force.[39] TRF has emerged as the most active and lethal terrorist outfit after 370. Reportedly, it is a front of LeT; however, its cadres have also come from HM and JeM. According to Indian intelligence sources, it is controlled by three LeT handlers Sajad Jat for North Kashmir, Khalid for Central Kashmir and Hanzala Adnan for South Kashmir.[40] It has claimed some of the deadliest terrorist acts. With a commanding presence

on social media, it creates smokescreens by claiming responsibility for terror attacks. It maintains an excellent outreach through its audio and video communications and pamphlets.

The incidents that the TRF claims are as follows:

- In 19 October, five labourers from West Bengal were killed.[41] The attack coincided with European delegates' visit, for the desired messaging, i.e., to convey to foreigners that Kashmir is far from normalcy.[42] No group ever officially claimed it. On the condition of anonymity, the local officers told the author during his field research that JeM was behind the killings. However, TRF targeting of non-locals suggests a substantial likelihood of TRF being involved in it.
- In the same month, four non-local truck drivers were killed, and a trader from Punjab was killed.[43]
- In February 2020, TRF claimed to have exploded a grenade in the high-profile Lal Chowk area.[44] It also claimed the encounter of SFs in Handwara-Colonel Ashutosh Sharma (CO 21 RR) and a Major martyred. However, Jammu and Kashmir Police (JKP) refuted their claims and stated that it is an offshoot of LeT. Further, JKP said that one of the militants killed was Haidar, a Pakistani national and the commander of LeT in Kashmir.[45]
- In April 2020, TRF's name featured in the five-day-long Keran encounter (Operation Rangdouri Behak) in which five soldiers martyred.[46] Three of the slain militants were locals who were missing since 2018 and had travelled to Pakistan on a valid visa through the Wagah-Attari route for weapons training, proving that TRF is not as local as it claims to be.[47]
- In May 2020, in Wangam (Kupwara) attack in which three CRPF personnel died. Reportedly, the assailants were foreign terrorists and highly trained in handling weapons as they took headshots.[48]
- In July and October 2020, the assassination of nine Bharatiya Janata Party (BJP) workers. Of which, three workers were killed

in Qazigund (Kulgam), BDC Chairman Bhupinder Singh and BJP District President, Abdul Hamid Nazar in Budgam, Sarpanch, Sajjad Ahmad Khandey in Qazigund (Kulgam) and BJP state executive president, Wasim Bari and two of his family members in Bandipura.[49]

- In January 2021, TRF claimed to have killed a non-local jeweller in Srinagar who had acquired a domicile certificate.[50]

Lashkar-i-Mustapha is a front for JeM. Its chief Hidayatullah Malik was arrested in Jammu's Kunjwani area with a grenade and a pistol.[51] He also conducted in India's National Security Advisor (NSA) Ajit Doval's office in New Delhi, as per JKP.[52] His arrest from Jammu makes a strong case for the organization being JeM's front as JeM cadres frequently use the Jammu-Punjab border for infiltration, which Pulwama investigations finding already confirmed.

Further, on the Pulwama suicide bombing's second anniversary, 6.5 kg of IED was also recovered from the Jammu bus stand.[53] JKP arrested Suhail Bashir Shah of Pulwama, who disclosed in the police interrogation that he received instructions from Pakistan's Al Badr to plant the IED at the Jammu bus stand.[54] Maulvi Altaf, the chief of the newly formed group Kashmir Tigers, was apprehended from Anantnag (Kashmir).[55] He was earlier a member of JeM, which brings forth JeM's another offshoot, i.e., Kashmir Tigers.[56]

Another front group, Muslim Janbaaz Force, claimed the most recent attack (17 January 2021) on a son of a restaurant owner (Krishna Dhaba), in Srinagar, in the vicinity of highly secure zones like Gupkar Road and the residence of the High Court Chief Justice. After the attack, they claimed its responsibility in a letter on the internet in which they warned non-locals against obtaining the domicile certificate. The attack coincided with the visit of European diplomats in Kashmir.[57]

Emerging Scenario: What to Expect?

In this perspective, the future trends in Kashmir can be assessed in the following ways:

- In none of the cases, the parent organisations, that is, the JeM and LeT, claimed any link with the offshoots. It is a deliberate strategy to create smokescreens of scattered, dispersed and leaderless, and unstructured militancy. In the future, this trend will continue. The local groups like HM will continue to survive, but only to maintain the façade of honouring local sentiments and strengthen popular support.
- After the ban on Jamaat-i-Islami (February 2019), initially, Jamaat cadres hibernated in rural areas. However, over the last six to seven months, they have significantly revived their activities through clandestine religious congregations and meetings. Jamaat's activities have picked up the pace in Shopian, Pulwama, and Srinagar downtown. However, the current strategy is to multiply the numbers and strengthen the social base and refrain from overt display of religious symbols to elude the intelligence agencies and political activities. However, such grassroots-level mobilisation work can prepare a fertile ground for revitalising the support system for terrorist groups and organising massive social unrest in the future at the opportune moment.
- Between 2018 and 2020 (up till December 2020), there was an increase of 22 per cent in recruitment into terrorist organisations, which implies that Pakistan's strategy to sustain the anti-India resentment and increase the number of local terrorists has been relatively successful.[58] Besides, in the post-370 period, there was a massive infiltration of FTs. Though there is no precise data about the action numbers, broad estimates from the author's expert interlocutors put the figure between 500 to 600.[59] In 2019, out of the total 152 terrorists killed, 32 were FTs, and in 2020, out of

the total 203 terrorists killed, 37 were FTs, which implies that a significant number of them are safely sheltered in Kashmir and other parts of India.[60] Some of the recent attacks have taken place in safe and militarised zones of Srinagar, which amply suggests that militants have made a firm base in Srinagar city.

- Given the robust presence of foreign terrorists, in the future, Kashmir will witness more Improvised Explosive Devices (IEDs) attacks on the convoys of SFs, fidayeen attacks on civilians and military installations, and killings of non-Kashmiri Indians. The terrorist groups will also target the Kashmiri police and administrative officers who were at the forefront in supporting the government on the Article 370 issue and efficiently maintaining law and order and managing the administration after August 2019.[61]
- Despite that ISI-controlled FT organisations like LeT, JeM, and Al Badr have emerged as the principal actors in Kashmir theatre, the local militants will continue to form a sizable chunk of terrorist groups. The Transnational Terrorist Groups (TTGs) like Al Qaeda and ISIS have made forays in Kashmir. However, they will function under the overall leadership and protection of ISI. They will not be able to go against Pakistan and occupy the mainstream space in militancy. Hence, militancy is less likely to go Iraq-Syria way even though the state has gone through intense Jihadi radicalisation. It merits a mention here that Kashmir's syncretic and moderate Islamic roots are a strong barrier against entities like the Taliban, Al Qaeda, and ISIS in no small measure. Hence, Kashmir is less likely to witness suicide bombings on a large scale, with local boys volunteering for fidayeen missions. Lastly, India's SFs are professional, trained and firm, and have a robust intelligence network; hence militancy will never dominate the socio-political space.
- After the US withdrawal, Pakistan is likely to shift the launch-pads and training camps of terrorist groups to Afghanistan, which will give

Pakistan plausible deniability in the event of a major terror attack in India. JeM cadres' interception at a Taliban training camp in Nangarhar (April 2020) confirms that Pakistan has already started training a part of its Kashmir-centric terrorist cadres in Afghanistan.[62]

- After 5 August 2019, Turkey and Pakistan have done a massive propaganda exercise to sustain and strengthen anti-India resentment, anger, and hatred. In the international forums, Imran Khan and RT Erdogan launched a tirade against India. In Kashmir, they have tried to project the abrogation of Article 370 on the lines of the alleged election rigging of 1987 and build a resistance narrative around it through provocative videos, songs, rap songs, soaps, and media coverage in Turkish Radio and Television (TRT) world.[63] They are available on google and youtube.[64] The main themes in the propaganda videos and literature are anti-India.[65] However, they are a concoction of lies, deceit, and exaggeration. They have provoking lyrics motivating people to fight for 'Azadi'. The videos depict ordinary people as victims with pellet gun injuries on their faces and the Indian security forces as brutal violators of human rights. In TRT world reports, communication lockdown and security lockdown issues were blown out of proportion, cleverly sidelining the aspect of jihadist radicalisation, which in the first place was the reason to resort to such strict security measures. They often fabricate the actual incident. In one of the videos, they showed a child sitting on his father's dead body, with soldiers marching in uniforms.[66] In the actual incident, the father died in the cross-firing between the SFs and militants, reportedly at the hands of the militants because the SFs follow detailed protocols of not harming the civilians. They have also shown ordinary people, including the females, being beaten ruthlessly with clubs and civilians being fired upon in other videos.[67] Further, Turkish videos have a distinct trait of featuring Kashmir and Palestine to equate them and internalise the Kashmir issue.[68] They are

in Turkish and Urdu so that they appeal to Turkish-speaking people across the globe. The idea is to seek sympathy from across the globe, from the governments, human rights activists, and intellectuals, by painting Kashmir militancy as a secular struggle against a ruthless dictatorship. Such biased videos and rap songs are poisoning young minds in a major way. Through the human rights plank, Pakistan and Turkey are luring young minds who are relatively secular and moderate. Further, TRT world pays Rs 20,000 (US$ 280) to Kashmir-based freelance writers for their one-sided news stories and opinion pieces, made to look objective and credible.[69]

Turkish serial "Diliris Erutgrul" became a massive hit in Kashmir. It was widely watched during the Corona pandemic and communication and security lockdown post-August 5, 2019.[70] Its theme of glorifying Muslims' Ottoman history coincided with the security and communication clampdown in Kashmir, which local people perceived as persecution and humiliation on account of their religious identity. After Ertugrul, an average Kashmiri identifies himself with Turkey. Many of them want to visit the grave of caliph Osman in Turkey. Such a popular sentiment can be the force that Pakistan and Turkey can use to orchestrate a massive civil resistance in the future. Also, year-and-a-half-long lockdown, internet shut down, poor governance, shoddy infrastructure, corruption, bureaucratic apathy and arrogance, and political vacuum have fuelled the resentment, alienation, and anger against Delhi, further strengthening the anti-India narrative.

- Given Erdogan's ties with transnational terrorist groups in the Middle East, strengthening ties with Pakistan, and his recent activism on Kashmir, Turkey, is likely to train the cadres of Kashmir-centric terrorist groups and supply them with its sophisticated and advanced drone technology. As per the latest intelligence reports, terrorist groups will use drones to attacks police posts and

military installations. Turkey's sophisticated Byraktar and Anka drones proved a great success in Syria[71] and, more recently, in the Armenia-Azerbaijan war.[72] So far, militants groups have been using drones for dropping weapons. With the rapid advancements in sophistication, there is a possibility of using them for infiltrating terrorists across the border.

- Besides, Turkey's private paramilitary group, SADAT, having close ties with Erdogan and known for training jihadis in Syria and Libya, is likely to become active in Kashmir. However, there is not much evidence of SADAT's direct involvement in Kashmir, except that US-based Ghulam Nabi Fai (a Kashmiri), ISI-lobbyist, and the chief of Kashmir American Council is a member of the Union of NGOs of Islamic World (IDSB) a front organisation of SADAT.[73] He has been seen with the SADAT chief, Tanriverdi, on various occasions. However, SADAT has robust ties with Pakistan's army and intelligence. SADAT is likely to establish a firm footing in Afghanistan, where it can train terrorists of all kinds, i.e., Taliban, ISKP, Haqqani Network, and all the Kashmir-centric groups. Additionally, SADAT can also train and raise coordinators in Kashmir who are experts in mobilising people and organising massive social unrest.

Policy Recommendations

Though it is beyond the scope of this paper to discuss the policy recommendations in detail, at such a critical stage, a few measures (in brief) are mentioned below:

- Win back the hearts and minds of the local population with outreach, political dialogue, good governance, and providing a healing touch.
- India must reinvigorate its efforts to check infiltration by all means and continue a harsh crackdown against terrorist groups and jihadist organisations.

- Special operations to apprehend and prosecute the dispersed cadres and sympathisers of Jamaat-i-Islami, a banned local Islamist group, will deprive the foreign terrorists of the local support base, which will make it immensely difficult for them to operate.
- India needs a strong and aggressive force posture with Pakistan, i.e., to make Pakistan's transgressions costly. It may lead to more cross-border surgical strikes and air strikes; however, such an approach runs a perennial risk of intentional or unintentional escalation.
- India has to provide a robust counter to Pakistan-Turkey's propaganda war in both international theatres and the local theatre of Kashmir. Delhi needs to mobilise global opinion in its favour and exert pressure on Pakistan through global forums, advocacy groups, and NGOs. It may require considerable efforts in building a favourable narrative on Kashmir in global academic, diplomatic and journalistic circles, which may be an extremely tough task for Indian politicians, diplomats, and security agencies, given the limitations of their resources, priorities, skills, and confusions.
- Extending full-fledged diplomatic and moral support to Pakistan's internal insurgent groups like the Baluch separatist movement, Sindh agitation, and the Pashtun Tahfuz movement may put Pakistan in a discomforting position. India can also consider hosting the 'government-in-exile' of such regional separatist groups of Pakistan.

Conclusion

After India's abrogation of Article 370 in 2019, Pakistan's investment of three decades received a major setback. Realising that Kashmir, its jugular vein, might slip out of its control, Pakistan changed tactics and strategy. There is also a rapid rise in the role of international actors in the Kashmir theatre. Most prominently, Turkey's role has direct relevance to militancy; however, other powers like Iran, China and Saudi Arabia have also developed robust stakes and networks in Kashmir. In addition to the

state actors, in the future, the global non-state actors will also be active in Kashmir.

Further alarming alienation levels among the local populace and the government's anti-Muslim image may make the situation even more complex and exacerbate Delhi's problems. By all measures, it seems India is in for challenging times in Kashmir. Hence, India's Kashmir-specific policymaking needs to be mindful of the developments taking place in the Kashmir theatre- both internally and externally.

Notes

1. This article is primarily based on the author's 40-day field trip to Jammu and Kashmir from January-February 2021 as part of research for his upcoming book project on the issue of terror financing in Kashmir, mostly during the communication and security lockdown phase following the abrogation of Article 370. During his research work, the author has interacted with a diverse range of interlocutors, including security officials, intelligence officers, militants, ex-militants, OGWs (Over Ground Workers) of militants, religious clerics, members of Jamaat-i-Islami, separatist leaders, mainstream politicians, students of the colleges and universities, ordinary citizens, government servants, as well as some deeply placed informers. The assessment is based on the corroboration of the findings from the field visit with secondary sources, which includes open-source news analysis. In the paper, names of certain interviewees have been kept anonymous.
2. Ali Gulrez (2020), "Cylinder Blast in Islamabad G10/2 Area", *INCPAK*, 25 May 2020. Available online at https://www.incpak.com/national/cylinder-blast-islamaba-g-10/, accessed on February 21, 2021.
3. "Hizb Chief Syed Salahuddin Designated 'Global Terrrorist' by US Vows to Fight on", *Hindustan Times*, 1 July 2017. Available online at https://www.hindustantimes.com/india-news/hizbul-leader-syed-salahuddin-designated-global-terrorist-by-us-vows-to-fight-on/story-jBS1tTdD92N1LVWHS0Q62I.html, accessed on February 20, 2021.
4. Manish Shukla (2020), "Terrorists in J&K Jittery After Attack on Hizbul Mujahidin Chief Syed Salahuddin in Pakistan", Zee News, 30 May 2020. Available online at https://zeenews.india.com/jammu-and-kashmir/terrorists-in-jk-jittery-after-attack-on-hizbul-mujahideen-chief-syed-salahuddin-in-pakistan-2286907.html, accessed on February 21, 2021.
5. Based on the author's field study in Kashmir for his first book *Radicalisation in India: An Explortion* and his upcoming book on "Kashmir's terror financing".
6. Based on the author's interviews with highly placed assets working with Pakistan's intelligence and currently active in facilitating the logistics and finance for terrorist groups in Kashmir.
7. Based on the author's field study in Kashmir in May-June 2019.

8. Abhinav Pandya (2019), "Militancy in Kashmir: A Study", Vivekananda International Foundation, 14 March 2019. Available online at https://www.vifindia.org/paper/2019/march/14/Militancy-in-Kashmir-A-Study, accessed on February 21, 2021.
9. Based on the information provided by the Jammu and Kashmir Police (JKP).
10. "Over 2000 Ceasefire Violations by Pakistan Along LoC this Year", *The Economic Times*, 14 June 2020. Available online at https://economictimes.indiatimes.com/news/defence/over-2000-ceasefire-violations-by-pakistan-along-loc-this-year/articleshow/76368614.cms?from=mdr, accessed on February 20, 2021.
11. Abhinav Pandya (2016), "A Realistic Understanding of Pakistan", Vivekananda International Foundation, 12 September 2016. Available online at https://www.vifindia.org/article/2016/september/12/a-realistic-understanding-of-pakistan, accessed on February 21, 2021.
12. Sriram Lakshman (2019), "Jaishankar Reiterates India's Claim Over Pakistan-Occupied Kashmir", *The Hindu*, 3 October 2019. Available online at https://www.thehindu.com/news/national/jaishankar-reiterates-indias-claim-over-pok/article29578523.ece, accessed on February 21, 2021.
13. Humza Khan (2019), "Don't Repeat 1971, Think of What may Happen to PoK: Rajnath Singh Warns Pakistan", *The Indian Express,* 26 September 2019. Available online at https://indianexpress.com/article/india/dont-repeat-1971-think-of-what-may-happen-to-pok-rajnath-singh-warns-pakistan-6029602/, accessed on February 21, 2021.
14. Based on author's interview with top-level military commanders of India and former officers of Pakistan's foreign service and the army.
15. Based on author's interviews with a senior police officer (posted in South Kashmir), hawala coordinators and former militants working as HM OGWs.
16. Based on author's interviews with HM coordinators, intelligence officials and the state police officers.
17. "Abdul Majid Dar-led Hizbul Faction to Expel Salahuddin", *The Times of India*, 12 May 2002. Available online at https://timesofindia.indiatimes.com/india/Abdul-Majid-Dar-led-Hizb-faction-to-expel-Salahuddin/articleshow/9656300.cms, accessed on February 21, 2021.
18. Md. Sadiq (2003), "The Assasination of Hizbul Leader Majid Dar", J&K Insights, 24 March 2003. Available online at http://www.jammu-kashmir.com/insights/insight20030324a.html, accessed on February 21, 2021.
19. Marvin G. Weinbaum and Babbar Meher (2017), "The Tenacious, Toxic Haqqani Network", MEI@75, 7 September 2017. Available online at https://www.mei.edu/publications/tenacious-toxic-haqqani-network, accessed on February 1, 2021.
20. Stephen Tankel (2014), *Storming the World Stage: The Story of Lashkar-i-Taiba*, Oxford: Oxford University Press.
21. Shishir Gupta (2020), "ISKP Chief's Arrest Brings out Clear to Pakistan's ISI: Official," *Hindustan Times,* 4 April 2020. Available online at https://www.hindustantimes.com/world-news/iskp-chief-s-arrest-for-gurdwara-attack-brings-out-clear-link-to-pakistan-s-isi-official/story-NPxxscxPawaFkD0y0WrALN.html, accessed on February 21, 2021.

22. Vijaita Singh (2020), "Kabul Gurudwara Attack 'Mastermind' Arrested," *The Hindu,* 5 April 2020. Available online at https://www.thehindu.com/news/international/kabul-gurdwara-attack-mastermind-arrested/article31260464.ece, accessed on February 21, 2021.
23. Ayesha Siddiqa (2019), "Jaish-e-Muhammad: Under the Hood", *The Diplomat*, 13 March 2019. Available online at https://thediplomat.com/2019/03/jaish-e-mohammed-under-the-hood/, accessed on February 1, 2021.
24. Puri, Luv (2009), "The Past and Future of Deobandi Islam", *CTC Sentinel*, Vol. 2, Issue 11, November 2009. Available online at https://ctc.usma.edu/the-past-and-future-of-deobandi-islam/, accessed on February 1, 2021.
25. Shishir Gupta (2020), "Afghan Forces Intercept Taliban Fighters, Find Jaish Terrorists Training for Kashmir", *Hindustan Times*, 16 April 2020. Available online at https://www.hindustantimes.com/india-news/afghan-border-clash-with-taliban-exposes-jaish-terror-camps-for-kashmir/story-GyRErS9kvUzbYcq544s6bO.html, accessed on February 20, 2021.
26. Abhinav Pandya (2020), "Will Coronavirus Prevent Pakistan and India Going to War this Summer?", *Haaretz*, 3 May 2020. Available online at https://www.haaretz.com/middle-east-news/.premium-will-coronavirus-prevent-pakistan-and-india-going-to-war-this-summer-1.8804261, accessed on February 21, 2021.
27. Surinder K. Sharma and Anshuman Behera (2014), *Militant Groups in South Asia*, New Delhi: IDSA and Pentagon Press. Available online at https://idsa.in/system/files/book/book_militantgroups.pdf, accessed on February 21, 2021.
28. Based on the author's interview with a former militant and currently, an HM OGW in Kashmir and a senior official from JKP.
29. Ibid.
30. Shishir Gupta (2020), "From Pak' Terror Factories 450 Reach Launch-pads to Enter Kashmir", *Hindustan Times*, 26 April 2020. Available online at https://www.hindustantimes.com/india-news/pakistan-hasn-t-let-covid-19-halt-terror-factories-raises-mobilisation-at-launch-pads/story-4df2yg5EzNoQ0Ko36hHmDI.html, accessed on February 21, 2021.
31. Based on author's interview with a senior intelligence officer, serving in Kashmir.
32. "IC-814: How Jaish-e-Muhammad Chief Masood Azhar's Brother Planned Indian Airlines Hijack in 1999", *Financial Express,* 6 March 2019. Available online at https://www.financialexpress.com/india-news/kandahar-ic-indian-airlines-flight-814-hijack-1999-december-masood-azhar-rauf-pulwama-jem/1506554/, accessed on February 21, 2021.
33. SD Pradhan (2020), "Pak Army's Green Book Reveals its Plans to Intensify Information Warfare in J&K," *The Times of India*, 8 May 2020. Available online at https://timesofindia.indiatimes.com/blogs/ChanakyaCode/pak-armys-green-book-reveals-its-plans-to-intensify-information-warfare-in-jk/, accessed on February 23, 2021.
34. Based on the inputs provided by Sahil Mustapha, former LeT OGW and an expert in cyber and communications technology issues.
35. Ibid.
36. Ibid.

37. "Terrorists Escape After a Gun-Battle in Kulgam", *Hindustan Times,* 11 April 2020. Available online at https://www.hindustantimes.com/india-news/terrorists-escape-after-gun-battle-in-kashmir-s-kulgam/story-U3QxxbhmV81Yos0Vsp9hPP.html, accessed on February 21, 2021.
38. "Terrorists Killed in Jammu had IEDs, Armour Piercing Ammmunition", NDTV, 1 February 2020. Available online at https://www.ndtv.com/india-news/terrorists-killed-in-jammu-had-ieds-armour-piercing-ammunition-police-2172975, accessed on February 21, 2021.
39. "Kashmir Tiger: Another Militant Outfit Emerges, Fourth in Two Years", *The Kashmir Walla,* 23 January 2021. Available online at https://thekashmirwalla.com/2021/01/kashmir-tigers-another-militant-outfit-emerges-fourth-in-two-years/, accessed on February 21, 2021.
40. Shishir Gupta (2020), "New J&K Terror Outfit Run by LeT Brass", *Hindustan Times,* 8 May 2020. Available online at https://www.hindustantimes.com/india-news/new-j-k-terror-outfit-run-by-let-brass-intel/story-wLZ5ACFQJMHVa8kt7weTPO.html, accessed on February 23, 2021.
41. "Five Migrant Labourers from West Bengal Killed by Terrorists in Kashmir", *The Economic Times*, 29 October 2019. Available online at https://economictimes.indiatimes.com/news/defence/5-migrant-labourers-from-west-bengal-killed-by-terrorists-in-kashmir/articleshow/71809535.cms?from=mdr, accessed on February 20, 2021.
42. Ibid.
43. Ibid.
44. Kamaljit Kaur Sandhu (2020), "TRF: The Latest Challenge for Security Forces in Kashmir," *India Today*, 5 May 2020. Available online at https://www.indiatoday.in/news-analysis/story/trf-the-latest-challenge-for-security-forces-in-kashmir-1674788-2020-05-05, accessed on February 20, 2021.
45. Ibid.
46. Ibid.
47. Ibid.
48. "3 CRPF Personnel Killed in Militant Attack in Kupwara", *The Economic Times*, 4 May 2020. Available online at https://economictimes.indiatimes.com/news/defence/3-crpf-personnel-killed-in-militant-attack-in-kupwara/articleshow/75536999.cms?from=mdr, accessed on 20, 2021.
49. Zulfiqar Majid (2020), "Nine BJP Workers Killed in Four Months in Kashmir", *Deccan Herald*, 31 October 2020. Available online at https://www.deccanherald.com/national/north-and-central/nine-bjp-workers-killed-in-four-months-in-kashmir-909503.html, accessed on February 20, 2021.
50. M Saleem Pundit (2021), "J&K-based Punjabi Jeweller gets domicile, shot dead by terrorists", *The Times of India*, 1 January 2021. Available online at https://timesofindia.indiatimes.com/india/70-yr-old-punjab-jeweller-shot-dead-in-jk/articleshow/80051370.cms, accessed on February 20, 2021.

51. Sunil Bhat (2021), "Lashkar-i-Mustapha Chief Hidaatullah Malik Arrested in Jammu", *India Today,* 6 February 2021. Available online at https://www.indiatoday.in/india/story/lashkar-e-mustafa-chief-hidayatullah-malik-arrested-in-j-k-shopian-district-1766646-2021-02-06, accessed on February 20, 2021.
52. Sunil Bhat (2021) , "Terror Attack Averted in Jammu, Police Recover 7 Kg. IED, Two Detained", *India Today,* 14 February 2021. Available online at https://www.indiatoday.in/india/story/7-kg-ied-detected-near-bus-stand-jammu-1769127-2021-02-14, accessed on February 21, 2021.
53. Ibid.
54. Ibid.
55. "Kashmir Tiger", n. 39.
56. Ibid.
57. Shakir Mir (2021), "J&K: In 2nd Attack on 'Non-Locals', Militants Shoot at Srinagar's Dhaba Owner's Son", The Wire, 18 February 2021. Available online at https://thewire.in/security/srinagar-militants-attack-krishna-vaishno-dhaba, accessed on February 21, 2021.
58. Based on the information provided by JKP.
59. Based on inputs provided author's interlocutors in Kashmir, including OGWs and border area residents.
60. "166 Locals among 203 Terrorists Killed in 2020", *The Times of India,* 29 December 2020. Available online at https://timesofindia.indiatimes.com/india/166-locals-among-203-terrorists-killed-in-2020/articleshow/80012563.cms, accessed on February 21, 2021.
61. Based on inputs provided by a senior official in the state intelligence.
62. Shishir Gupta (2020), "Afghan Forces Intercept Taliban Fighters, Find Jaish Terrorists Training for Kashmir", *Hindustan Times*, 16 April 2020. Available online at https://www.hindustantimes.com/india-news/afghan-border-clash-with-taliban-exposes-jaish-terror-camps-for-kashmir/story-GyRErS9kvUzbYcq544s6bO.html, accessed on February 21, 2021.
63. See "Ja Chod de Meri Wadi", Kashmiri Song by DGISPR. Available online at https://www.youtube.com/watch?v=gyXZceFllmU, accessed on February 21, 2021.
64. See "Kashmir ki Azadi Tak", Rap Song by ISPR. Available online at https://www.youtube.com/watch?app=desktop&v=PFkGeUhGjIo, accessed on February 21, 2021.
65. See "Ab Tou Azad hai Duniya", ISPR Official Video. Available online at https://www.youtube.com/watch?app=desktop&v=uA2j9MHzgEU, accessed on February 21, 2021.
66. See "Ja Chod de Meri Wadi", n. 63.
67. See https://www.youtube.com/watch?app=desktop&v=vcOeH7pNAq8 (Turkish video on Kashmir).
68. Ibid.
69. Based on the author's interview with a veteran Kashmiri journalist.
70. "Turkish TV Program Diliris Ertugrul Immensely Popular in Kashmir, Raises Hope Within People", *The EurAsian Times*, 17 July 2020. Available online at https://eurasiantimes.

com/turkish-tv-series-dirilis-ertugrul-giving-hope-to-kashmiris/, accessed on February 21, 2021.

71. Sergey Sukhankin (2020), "Is Turkey about to Become a Drone Superpower?", Fair Observer, 5 May 2020. Available online at https://www.fairobserver.com/region/middle_east_north_africa/sergey-sukhankin-turkey-drones-superpower-denfense-industry-arms-trade-news-00171/, accessed on February 21, 2021.
72. Abhinav Pandya (2020), "Is Pakistan Arming the Kashmir-centric Terrorist Groups with Drones?", Usanas Foundation, 9 November 2020. Available online at http://usanasfoundation.com/is-pakistan-arming-the-kashmir-centric-terrorist-groups-with-turkish-drones, accessed on February 21, 2021.
73. Abdullah Bozkurt (2021), "Turkey's Paramilitary SADAT Teamed up with Convicted Felon in the US to Act Against India", Nordic Monitor, 11 February 2021. Available online at https://nordicmonitor.com/2021/02/turkeys-paramilitary-network-teamed-up-with-convicted-felon-in-the-us-to-act-against-india/, accessed on February 21, 2021.

Is China Preparing to Establish Indian Ocean Theatre Command at Gwadar?

Narender Kumar

China is conscious of the fact that projection of power requires dynamic maritime strategy and robust naval capabilities. China knows that unless it is able to secure its interests in the Indian Ocean it will be difficult to sustain economic growth. The land link to the Indian Ocean through China Pakistan Economic Corridor (CPEC) and China Myanmar Economic Corridor (CMEC) are important links to gain access to ports in the Indian Ocean but they are not a replacement to the strategic sea lines of communication (SLOC). Land links provide additional connectivity for economic benefits, but land links do not facilitate projection of power to secure vital strategic interests in the vast Indian Ocean Region (IOR). Under such circumstances, what is the alternative available to China to maintain its presence in the Indian Ocean? To secure vital strategic interests in the IOR, China is working on a robust port strategy to maintain a permanent presence in the Indian Ocean. Such a strategy will create a security dilemma for India especially with Chinese built ports coming up in the immediate neighbourhood of India including Chittagong in

Brigadier **Narender Kumar** (Retd) is Visiting Fellow at Centre for Land Warfare Studies and a former Distinguished Fellow at the USI, New Delhi.

Bangladesh, Gwadar in Pakistan, Hambantota in Sri Lanka, Kyaupkyu in Myanmar, Malacca in Malaysia and Mombasa in Kenya.[1]

Why is China more than eager to maintain its presence in the Indian Ocean Region? China has three strategic challenges: First, to secure and maintain uninterrupted movement of its commercial fleet along the Indian Ocean SLOCs; second, to keep choke points open and; third, to project power if its maritime interests are threatened or compromised. The main worry of China is to keep its SLOCs in the Indian Ocean open and secured since 40 per cent of China's overseas trade and 80 per cent of its total imports are through the Indian Ocean.[2] China's apprehensions arise from the fact that at any point in time there are over 120 warships of extra-regional powers deployed in the Indian Ocean in support of various missions. Till now the region, by and large, has remained peaceful albeit under contestation.[3] This competition is likely to increase with extra-regional powers displaying greater interest in the region for trade and energy security.

China's Port Strategy in the Indian Ocean Region

Why China is suddenly rushing to the Indian Ocean and acquiring overseas ports simultaneously with a naval build-up of historical proportions?[4] China wants the world to believe that its increased interest in the Indian Ocean is due to rising commerce and trade with IOR rim countries and the threat of non-state actors to the SLOCs. But in reality, it seems that China's efforts are directed to securitise the Maritime Silk Route. As a result, some of these ports could ultimately become strategic strong points for China to maintain its maritime footprints in the IOR. According to the Chinese Ministry of Transportation, as of 2018, Chinese companies have participated in the construction and operation of a total of 42 ports in 34 countries under the Silk Road scheme.[5] The construction and operation of the majority of these ports in the Indian Ocean by the Chinese companies obviously is a cause of concern to India and many

other countries. In fact, overseas military bases are considered an utmost necessity of China's global power dream. The world has already witnessed how China through debt trap strategy has acquired few strategic ports that could ultimately become maritime strong points to project power in the Northern Indian Ocean. There are reports that China is likely to establish replenishment, berthing and maintenance bases in foreign countries through mutually beneficial and friendly consultations.[6]

The People's Liberation Army (PLA) Navy defines five functions of overseas military bases: projection of power for war, diplomatic signal, changed politico-military ideology, building relationships and providing facilities for training.[7] In pursuance of maritime ambition to project power, it is important for PLA Navy to maintain a permanent presence in the IOR because China need ports to provide logistic support to its fleet and military missions overseas. China has not denied the possibility of the creation of "Overseas Strategic Support Bases"[8] for replenishment of logistics, berthing and maintenance of its fleets operating beyond the shores. According to Sun Degang, Associate Research Fellow at the Shanghai Institutes for International Studies, China's port projects along the Indian Ocean will be a comprehensive test of China's economic capabilities, risk prevention and the ability to set the international agenda.[9]

Along with the port strategy, China has already begun establishing military bases with Djibouti being the first in line of many ports/bases that may be in the pipeline in future. In addition, China has intelligence sharing agreements with several countries in the region, including reportedly Bangladesh (2018), and presumably Pakistan, though it is not clear whether these are limited to counter-terrorism threats or include maritime domain information sharing.[10] China has also sold two submarines to Bangladesh recently and there could be a possibility that China may be seeking maritime intelligence through these two submarines as well. Kyaukpyu a port that is developed by China in Myanmar is also the starting point of a pipeline that could send LNG and oil to China.[11]

This port is also important for China to maintain its presence in the Bay of Bengal that till recently was considered an exclusive domain of India. Besides, Sri Lanka's Hambantota port has been taken over by China on lease for 99 years extendable to another 99 years.

Of all, strategically Gwadar is the most significant port for China, just 400 km from the important Hormuz Strait, through which 40 per cent of Chinese imported crude oil flows.[12] Though Pakistan has stated that the lease of Gwadar to China is purely for commercial purposes but deep-sea port at Gwadar is being prepared for dual purposes. The annual traffic has indicated that Gwadar Port is not commercially viable with limited vessel traffic. The facade of China and Pakistan was exposed when Chinese military sources had spoken about deploying Navy Marines at Gwadar and Djibouti to defend Chinese interests overseas.[13] Considering its strategic location and land link to Tibet, Gwadar is considered a strategic strong point of China in the IOR.

China's Long Term Objective

In 2011, China was forced to evacuate 36,000 Chinese nationals from Libya that resulted in abandoning projects worth US$ 20 billion. The Libyan fiasco gave China a lesson that it cannot risk such a large number of its citizens and billions of dollar investment to threat from states and non-state actors. At the same time, such a huge investment need security so that the losses can be prevented/reduced. By 2030, China could have 10 million of its nationals overseas (from the current strength of 5.5 million as of date), and US$ 1,000 billion in investment abroad.[14] The current expansion plan of construction of ports and subsequent conversion of these ports into military bases is irrefutable and has long term implications for security calculus in the IOR. The flip side of port strategy is that there will be more bases of China to target in the Indian Ocean itself. Thus China cannot leave such a large number of assets exposed to threats from state and non-

state actors, as a result at some point in time, China would certainly need a security umbrella in the IOR with fully functional command and control headquarters.

The query that demands attention: Can China establish command and control over these ports and military bases from mainland China or it would need an advance headquarters in the Indian Ocean to exercise direct control over these bases and fleets operating in the IOR? Overseas logistic support and maritime operations are complex thus there is a need to maintain some command and control elements in IOR so that the fleets and military bases do not operate independently of each other. Moreover, there is a need to coordinate with host countries and other nations using international water for logistic support, change of crew, dealing with maritime confrontation and application of force if compelled and not to forget addressing certain sovereignty protocols. Given the circumstances, PLA Navy may find it difficult to exercise command and control from the mainland. Thus sooner or later China would require maritime advance Headquarters or IOR Theatre Command positioned at one of the IOR Rim countries.

The options for such a strategic headquarters in Gwadar, Hambantota and Djibouti cannot be ruled out. The possibility of establishing it on the African East coast is low since it is not in close proximity or astride important SLOCs in the IOR. Though Hambantota is close to Malacca Strait and SLOCs but Sri Lanka may be a hesitant host. Similarly, Djibouti is sandwiched in the narrow Red Sea neither connected by land link nor astride SLOCs in the Indian Ocean with little influence over the Strait of Hormuz. While Kyaukpyu port is connected to the land link but with little or no influence over the strategic SLOCs in the IOR.

In the overall assessment, Gwadar appears to be a strategic strong point that offers China all the required advantages needed for a possible command and control headquarters. More importantly, Pakistan is a willing host and a strategic partner. Gwadar has the land link, a port

for dual purposes and infrastructure for basing large headquarters on the shore. In addition, it is astride strategic SLOCs that not only can protect energy security and commercial fleet but can also disrupt the supply of crude oil to adversaries if push comes to shove. The development of Gwadar airport provides China third dimensional capabilities for maritime operations.

Options for India to Build Capabilities in IOR

The advantage at this stage is certainly with India as a resident maritime power in the Indian Ocean. But this advantage will slip away if capabilities to consolidate maritime domination is not done in time. There may be a desire to have minimum of three aircraft carrier groups for sea denial and projection of power, but same may not be possible given the resources being made available to the defence forces. India must first fill the doctrinal gap in its strategy as a resident power in the Indian Ocean. Once grand strategy for the Indian Ocean is put in place, the structure of theatre command, capabilities required to be a dominant maritime power and interoperability issues with extra-regional powers will fall into place. Notwithstanding the above, some of the issues that need urgent attention are given in the succeeding paragraphs.

Conversion of few strategic islands as unsinkable aircraft carriers may be a good option, to begin with, while developing comprehensive maritime capabilities will take a long time. Though building islands as comprehensive military bases is not a replacement to the aircraft carriers because islands are fixed and cannot project power in desired areas, but to a great extent, it can provide logistic support, sea surveillance and maritime air cover to the fleets operating on high seas. The strategic location of Andaman and Nicobar and Lakshadweep offer India with great advantage to operate air and naval assets to dominate strategic SLOCs. In addition, India needs to hasten up other offshore radar and port facilities in IOR, especially in Maldives, Mauritius and Seychelles.

There is a debate whether sea denial and sea control will work in the Indian Ocean where major sea traffic is in high seas which are considered global common? What is the alternative? Basic capabilities that India should develop is sea surveillance to affect anti-access or sea control. Since in the case of a prolonged conflict, sea control would allow credible power projection and maritime trade blockade (against Pakistan) and trade intervention (against China).[15] Sea control operations need an integrated approach and robust maritime capabilities.

It is always not necessary to compete for ship to ship capabilities when other instruments of force are available. There is a need for India to develop non-kinetic and hybrid warfare capabilities because that will ultimately reduce the use of conventional forces in foreseeable future. Though non-kinetic and hybrid capabilities are not a replacement to the conventional maritime forces but they can enable and reduce the use of conventional forces to a great degree. Non-kinetic and hybrid warfare is as much applicable to maritime operations as in the case of land and air operations.

Cultivation of naval cooperation is vital against revisionist rising global power like China. India alone cannot deal with rising footprints of China in the IOR. Indian Ocean Rim Association for Regional Cooperation (IORARC) was a good idea but it has remained only a gathering for yearly ritual and has not moved forward to work out a consensus on security, use of ports by extra-regional powers to prevent militarisation of IOR. The QUAD is one option but inadequate to cover entire Indo-Pacific; however, India could operationalise logistical agreements with France and the other IOR rim countries and vice versa. In addition, there is a need for India to forge cooperative alliance with rim countries to use the facilities for surveillance, logistics and intelligence sharing.

Most of the island nations in the Indian Ocean are economically fragile with little inherent capabilities to deal with traditional and non-traditional threats. In the light of the foregoing, India should endeavour to become a net security provider especially to the island nations &

IOR Rim countries against non-traditional threats. Even measures like building ocean surveillance capabilities can help smaller nations to protect their exclusive economic zones and prevention of crime on high seas. South Asia is disaster-prone and economically poor countries are not in a position to develop exclusive capabilities for effective Humanitarian Assistance and Disaster Relief (HADR). India can assist in HADR and dealing with organised crime on the high sea. India thus needs to project soft power to develop bilateral relations and capabilities. If India does not step in, China would and that will not be in the interest of India.

Conclusion

It is a complex issue to manage multiple bases away from the mainland especially when there are threats and vulnerabilities from states and non-state actors. Wang Tianze, Qi Wenzhe, and Hai Jun, all analysts at the Institute of Military Transportation of the PLA, Ground Forces argue that: "to protect our ever-growing overseas interests, we will progressively establish in Pakistan, United Arab Emirates, Sri Lanka, Myanmar, Singapore, Indonesia, Kenya and other countries a logistical network based on various means, buying, renting, cooperating, to construct our overseas bases or overseas protection hubs".[16] The establishment of military bases is a foregone conclusion, but what is of interest is how soon China will locate their advanced headquarters/IOR Theatre Command in any of the rim countries?

Xue Guifang and Zheng Hao, who argue that efforts are needed to "build an international environment that will accept China's construction of overseas bases."[17] Today China is not shy to accept that places of strategic nature acquired or managed by China in the IOR could be converted into military bases for protection of trade, personnel and investment. What is of interest to India is how fast can we lay down a maritime grand strategy and how fast India can build capabilities so that its interests are not compromised.

Notes

1. Angela Stanzel (2019), "China Trends #2 – China's String of Ports in the Indian Ocean", Institut Montaigne, 25 June 2019. Available online at https://www.institutmontaigne.org/en/blog/china-trends-2-chinas-string-ports-indian-ocean, accessed on March 20, 2021.
2. Li Jiacheng (2017), "Developing China's Indian Ocean Strategy", *China Quarterly of International Strategic Studies*, Vol. 3, No. 4, p. 484.
3. "Over 120 warships deployed in Indian Ocean Region: CDS Bipin Rawat", *Hindustan Times*, 11 December 2020. Available online at https://www.hindustantimes.com/india-news/over-120-warships-deployed-in-indian-ocean-region-cds-bipin-rawat/story-xHcDsHJo4OeXVAoWpEiBAO.html, accessed on March 20, 2021.
4. Mathieu Duchatel (2019), "China Trends #2 – China's Port Investment: The Flag Behind The Trade", Institut Montaigne, 24 June 2019. Available online at https://www.institutmontaigne.org/en/blog/china-trends-2-chinas-port-investment-flag-behind-trade, accessed on March 18, 2021.
5. Angela Stanzel (2019), "China Trends #2", n. 1.
6. "China denies reports to set up 18 naval bases in Indian Ocean", *The Economic Times*, 27 November 2014.
7. Mathieu Duchatel (2019), "China Trends #2 – Naval Bases: From Djibouti to A Global Network?", Institut Montaigne, 26 June 2019. Available online at https://www.institutmontaigne.org/en/blog/china-trends-2-naval-bases-djibouti-global-network, accessed on March 20, 2021.
8. "China denies reports", n. 6.
9. Sun Degang (2017), "The situation of China's participation in Indian Ocean port projects and risk analysis" (**中国参与印度洋港口**项目的形势与风险分析), *Contemporary International Relations* (现代国际关系 Xiandai Guoji Guanxi) Vol. 7.
10. See, e.g., "Dhaka, Beijing Sign Agreements on Intelligence Sharing, Counterterrorism," *Dhaka Tribune*, 26 October 2018. Available online at https://web.archive.org/web/20200508185610/https://www.dhakatribune.com/bangladesh/nation/2018/10/26/bangladesh-china-sign-3-agreements-on-security-cooperation, accessed on March 20, 2021. Also see Andrew Small, The China Pakistan Axis, 76ff.
11. See "Chinese Ambitions for Indian Ocean Ports", 20 January 2021. Available online at https://www.portstrategy.com/news101/world/asia/chinese-ambitions-for-indian-ocean-ports , accessed on March 23, 2021.
12. "What is China's Military Aspiration for Pakistan's Gwadar Port?", *Mint*, 18 August 2020. Available online at https://www.livemint.com/news/world/what-is-china-s-military-aspiration-for-pakistan-s-gwadar-port-11597725691366.html, accessed on March 23, 2021.
13. Kuldip Singh (2020), "China's High-Security Compound at Gwadar: Should India Worry?", *The Quint*, 8 June 2020. Available online at https://www.thequint.com/voices/

opinion/gwadar-port-china-pakistan-economic-corridor-indian-interests-chinese-army-strategy, accessed on March 20, 2021.

14. Mathieu Duchatel (2019), "China Trends #2", n. 4.
15. Captain Sanjay Sachdeva (2014), "Sea Control by The Indian Navy: A Pragmatic Assessment", *Naval War College Journal*, p. 123.
16. Wang Tianze, Qi Wenzhe, Hai Jun (2018), "An Exploration Into Logistical Support of Transportation and Projection for Military Bases Abroad" (**海外**军事基地运输投送保障探讨), *Guofang Jiaotong Gongcheng yu Jishu* (Defense Transportation Engineering and Techniques), no. 1, pp. 32-36.
17. Mathieu Duchatel (2019), "China Trends #2", n. 4.

India's *Atmanirbhar Bharat* and Defence Outreach: Leveraging the Gulf Strategic Partnerships

Manjari Singh

In May 2020 when Prime Minister Narendra Modi gave the clarion call for *Atmanirbhar Bharat*[1] or 'Self Reliant India'; the initiative, at least until then referred to economic stimulus packages intended for the distressed population during the Pandemic. However, soon after, it became the buzzword for modern India, the one touted as a responsible, reliable regional and global power which visualises itself as a self-reliant and self-sufficient economy while maintaining its strategic autonomy. This realisation further got affirmation when the country became the first responder and a responsible supplier of basic medicines such as paracetamol and hydroxychloroquine to around 120 countries during the initial stages of COVID-19, thus providing impetus to India's medical diplomacy.[2]

Surprisingly, even though the initiative is extended to all the sectors available in the country; however, the later addition of defence component is most notable as it not only involves the promotion of indigenous defence production and manufacturing but also propels massive outreach to friendly countries and reliable partners.[3] According to Stockholm

Dr. **Manjari Singh** is Associate Fellow at Centre for Land Warfare Studies, New Delhi.

International Peace Institute (SIPRI) Fact Sheet 2021, even though India's arms imports have decreased by 33 per cent from 2011-15 to 2016-20, still it is the second-largest arms importer in the world after Saudi Arabia by importing 9.5 per cent of its arms, mainly from Russia (49 per cent), France (18 per cent) and Israel (13 per cent).[4] To make matters worse, India is also the third-largest country in terms of defence expenditure after the US and China, with US$ 71.1 billion spending in the defence sector.[5]

Given the changing geopolitical dynamics, not only does New Delhi direly needs to diversify its import partners but also needs to invest in the indigenisation of defence products to reduce its dependence on other countries. Most importantly, the inability to indigenous defence procurement, manufacturing and production was termed as the major lacuna in the long talked about but never acted upon defence reforms proposed under the 1990s Arun Singh Committee report on Defence Expenditure.

Subsequently, both the Kargil Review Committee (KRC) in 1999 and the Group of Ministers' report (2000) set up post-Kargil conflict, vouched for indigenisation. However, given the civil-military non-relations, lack of foresight, but most importantly, bureaucratic hurdles, led to India shying away from taking up a crucial step towards defence modernisation through indigenisation.[6]

Thus, identified as one of the 'core areas', the defence sector—like other sectors initiated under *Atmanirbhar Bharat*—stands on five pillars, namely: economy, infrastructure, systems, vibrant geography and demand. Taking all the pillars into account, strategic partnerships with the Persian Gulf economies have the ability to further India's goal of indigenisation in defence manufacturing, production and export. To strengthen the argument, in December 2020, Minister of State for External Affairs, V. Murleedharan remarked that "[t]he Gulf countries with their surplus capital, open economies and connections with different

regions of the world such as Africa, Central Asia and Europe are well placed to partner with India in its quest. This is a win-win proposition for both India and Gulf".[7] Even though, this proposition was primarily focused on extending the *Atmanirbhar Bharat Initiative* in economic and energy-related investments, however, it stands valid even for the defence sector. For, the Gulf not only provides a vibrant market for Indian defence equipment, arms and ammunitions at a cheaper and reasonable rate, but also provides an opportunity for joint ventures and investments in the defence field. Additionally, in return, India is also an important export destination for the regions mobile anti-drone systems, multi-role transport tankers, emerging technologies and others.[8]

In August 2020, a 'negative list of 101 defence items' was issued by the Ministry of Defence (MoD), which includes not only minor products but also warfare systems, integrated platforms, and combat vehicles which India pledged to stop importing in a step-wise manner in three to four quarters starting from December last year. All these 101 items will either be procured domestically or produced through joint ventures with reliable partners. Interestingly, most of the items listed can be achieved through joint ventures with Gulf economies too. Probably, the political dispensation and the policymakers have already ventured into this idea as the Gulf is touted as India's second most preferred outreach destination after South Asia and followed by Africa. Thus, evolving strategic partnerships with the Persian Gulf nations can be used as a leverage point to enhance India's defence industry. Interestingly, the Gulf already plays a strategically crucial role in India's economic development, social progress and political ascendance. With *Atmanirbhar Bharat*, it has the potential to contribute enormously to developing India's defence sector.

As established, Indo-Gulf relations have transcended over a period of time from India being a benign power with traditional buyer-seller kind of transactional interaction with the region based on ideologically driven

Non-aligned movement (NAM) to India being a pragmatic strategic partner, a more reliable, responsible and trustworthy partner.[9] Thus, it is safe to argue that with regard to the Persian Gulf, Indian foreign policy has been evolving progressively and much of it is to do with New Delhi's response to the evolving needs and conditions in the region, as also domestically. While its pre-historic relations hovered around trade, specifically in spices, gold and silk, with the discovery of oil in the then Persia in 1908 and subsequently in Gulf Arab countries, the traditional relations with the region were focused primarily on securing energy. Subsequently, with the oil boom in the 1970s, as the economic prospects in the Gulf increased, it gave impetus to massive Gulf migrations from India, especially from Southern India.[10]

However, despite Gulf's enormous contribution to India's GDP, the relations continued to be transactional in nature. It was only since the 2000s that India started to elevate its relations with the major Gulf economies to strategic partnership levels. Nevertheless, there was a lull in the engagements for a very long time until Prime Minister Narendra Modi's ascendance since 2014, wherein with the introduction of 'Link West' and 'Act West' policies, relations with Gulf economies began to further. Today, India has signed a Memorandum of Understanding on defence cooperation with as many as five Gulf nations, namely, Iran (2001), UAE (2003), Qatar (2008), Saudi Arabia (2014) and Oman (2016).[11] However, the countries have been majorly collaborating on intelligence sharing, counter-terrorism, counter-piracy and counter-extremism measures as of now with minimum or no cooperation on investments in defence procurements, production, exports and imports. This becomes even more important as the still energy component in the strategic partnerships with Gulf finds precedence above all. Moreover, with Persian Gulf economies' drive towards economic diversification to achieve *Vision 2030*, investment in defence production can play a major role.

To do so, first and foremost, India may like to establish an exclusive Defence Strategic Partnership with major Gulf countries.[12] This is important as not only it provides impetus to its defence services in these countries and vice versa, enhance defence exports and imports, caters to joint ventures in defence projects, helps in setting up defence industries with private players' partnerships in the region and in India;[13] but can also help the countries to work closely on securing the Sea Lines of Communications (SLOC) from any potential Chinese blockades in the future.

While once the start-ups in the sector in India are picked up by big private industries, they can invest in joint ventures with Gulf economies; with regard to the 101 lists, India can successfully invest in shipbuilding factories specifically with Oman with which the country has maritime cooperation and is successfully working jointly in anti-piracy, marine and coastal security issues. Moreover, India can supply indigenous short-range drones such as Idea Forge drones with high to middle altitude range which can be utilised in situational awareness at ground levels; supply loitering munitions such as MIDAS used for tactical levels which the ground troops may use; aviation industry may be boosted by production of indigenous helicopters such as Dhruv Advanced Light Helicopter (ALH) and its weaponised version ALH-WSI (weapon system integration); and Hindustan Aeronautics Limited (HAL) produced single-engine, fourth-generation, multirole light fighter aircrafts such as TEJAS. Battle and manoeuvre tanks such as Arjun MK1, Arjun MK2 and their variants may find a good market in the Gulf.[14]

Remarkably, in October 2020, MoD conducted a webinar with UAE, wherein private industries from both countries participated and presented their cases on individual production capabilities. From the Indian side, "L&T Defence, GRSE, OFB, MKU, Bharat Forge and Ashok Leyland made company and product presentations on major platforms/equipment like Artillery Systems, Radars, Protected Vehicles, Coastal Surveillance

System, Akash Missile system and Ammunition etc. From the UAE side STREIT Group, Rockford Xellerie, EDGE, TAWAZUN and Marakeb Technologies presented their case".[15] Such initiatives are required with other major Gulf countries such as Qatar, Saudi Arabia, Oman, and Iran as well.

To further bolster its defence relations and to cater responsibly to the region, India must seriously work upon its expeditionary capabilities, form a robust evacuation policy, and strengthen its defence diplomacy, economic interests and alliances with all the countries in the region while maintaining its strategic autonomy. It is noteworthy that despite enormous regional clout, until now India is still not an active player in the region unlike the US, UK, Russia and China; at the most, it is seen as a responsible 'partner' but not an actor in the region. Post-Cold War and after the disintegration of the Soviet Union, if not entirely but too much extent the Indian tilt towards the US policy in the region is well noticed and acknowledged by all the major regional and external players. On top of it, concerns over China's visible strategic footprint in the region, Pakistan factor and India's own aspirations to be recognised as a regional and global power, must push New Delhi into considering building military bases in the region. This is not to participate in countries' internal matters but to oversee and maximise its joint defence production, manufacturing and cooperation and also to build a permanent base for evacuation of its expatriates in times of need. In this regard, Al Duqm port offered by Oman to Indian Navy in 2018 for establishing a military base can be used efficiently by India.[16]

On balance, while defence outreach through *Atmanirbhar Bharat* may sound promising, it requires a concerted and diligent effort to succeed. Given the visible competitions especially in the Gulf Arab market owing to the normalisation of Israel-Arab relations, Pakistan's defence outreach, US plans of withdrawal and China's active strategic footprint; India must work on its deliverables. Also, as India has many times missed

the bus on defence indigenisation and modernisation, it cannot afford to have a lax attitude this time. However, the Indian Army Chiefs' unprecedented visit to Saudi Arabia and UAE in December 2020, and the frequent visits and interactions with the major countries in the Gulf even amidst the pandemic does indicate that India is serious in its defence outreach to the Gulf. Besides, MoDs conduction of webinar with Indian and UAE's private industries further clarified that the region sees India as a potential defence partner. Thus, if nurtured properly, it cannot be neglected that Gulf has the potential and capability to play a major role in boosting India's defence industry.

Notes

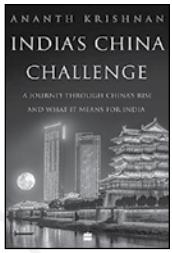
1. While the idea of self-reliance was introduced in 1940s when the Indian leaders took inspiration from Soviet model and later on from South Korean, Taiwanese and Brazilian models, the initiative was popularised by Prime Minister Narendra Modi in May 2020 and was eventually expanded to all sectors in the country. The initiative was introduced with a disclaimer that it does not advocate for a self-centered protectionist approach. It is noteworthy that despite numerous discussions on defence reforms and defence manufacturing especially post the Kargil Review Committee (KRC) report, nothing substantial has been achieved in that sector. Therefore, to provide an impetus to that, by August 2020, Defence Minister Rajnath Singh called for an extension of *Atmanirbharta* in Defence sector as well.
2. "India supplied paracetamol, hydroxychloroquine to over 120 countries in last two months: Piyush Goyal", *The Economic Times*, 14 May 2020. Available online at https://economictimes.indiatimes.com/news/politics-and-nation/india-supplied-paracetamol-hydroxychloroquine-to-over-120-countries-in-last-2-mths-piyush-goyal/articleshow/75740457.cms?from=mdr, accessed on March 26, 2021.
3. Ministry of Defence (2020), "Raksha Mantri Shri Rajnath Singh Highlights Atmanirbhar Bharat Initiative of MoD at Defence Industry Outreach Webinar", Press Release, 27 August 2020. Available online at https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1649023#:~:text=To%20promote%20Atmanirbhar%20Bharat%20in,for%20procurement%20from%20domestic%20vendors.&text=Raksha%20Mantri%20said%20that%20the,reliance%2C%20in%20the%20defence%20sector, accessed on March 27, 2021.
4. Pieter D. Wezeman, Alexandra Kuimova and Siemon T. Wezeman (2021), "Trends In International Arms Transfers, 2020*", SIPRI Fact Sheet 2021,* March 2021. Available online at https://sipri.org/sites/default/files/2021-03/fs_2103_at_2020.pdf, accessed on March 27, 2021.

5. Shaurya Karanbir Gurung (2020), "India Third Largest Military Spender in World, After US and China", *The Economic Times*, 27 April 2020. Available online at https://economictimes.indiatimes.com/news/defence/global-military-spending-saw-largest-increase-in-decade-in-2019-china-india-in-top-3-study/articleshow/75404166.cms?from=mdr, accessed on March 27, 2021.
6. Anit Mukherjee (2013), "Failing to Deliver: Post-Crises Defence Reforms in India, 1998-2010", in Kanti P. Bajpai and Harsh V. Pant (eds.), *India's National Security: A Reader*, New Delhi: Oxford University Press, pp. 425-468.
7. Ministry of External Affairs (2020), "Remarks by Minister of State for External Affairs during Panel Discussion on India and the Gulf: Leveraging Energy Partnerships, Investment Opportunities and Emerging Technologies for 'Atmanirbhar Bharat' at the PBD Conference", 11 December 2020. Available online at https://www.mea.gov.in/Speeches-Statements.htm?dtl/33285, accessed on March 27, 2021.
8. Ahead of the 2020 Republic Day parade held amidst protests against the Citizenship Amendment Act (CAA), therefore, given the security requirements in India, UAE promptly supplied its mobile anti-drone systems to India. Around the same time, for mid-air refuelling of the Rafale jets, the country agreed to deploy its Airbus 330 multi-role transport tankers for India. For more information, See: Shishir Gupta (2021), "Deepening India-UAE Defence Cooperation Enlarges India's Footprint in West Asia", *The Hindustan Times*, 15 March 2021. Available online at https://www.hindustantimes.com/analysis/deepening-india-uae-defence-cooperation-enlarges-india-s-footprint-in-west-asia-101615786054363.html, accessed on March 27, 2021.
9. M.S. Agwani (1976), "India and the Arab World" in B. R. Nanda (ed.) *Indian Foreign Policy: The Nehru Years* , New Delhi: Vikas Publishing House, pp. 60-77.
10. Manjari Singh (2020), "India-Persian Gulf Relations: From Transactional to Strategic Partnerships", *CLAWS Journal*, Vol. 13, No. 1, pp. 157-173.
11. Ministry of Defence (2020), "Interaction Mechanism on Defence Cooperation", Hardcopy available with the Army Headquarter.
12. In a Personal Interview conducted with a Defence Official who was actively involved in the creation of 101 negative list and Defence Procurement Procedure Report 2020 and Defence Acquisition 2020 report but who wished to remain anonymous.
13. For instance, ONGC Videsh Limited which already acquires 10 per cent stakes in UAE offshore oilfields can also be persuaded to venture into defence sector for optimum results. Similarly, Reliance Group of Industries can also venture into this field. As these private players are already trusted partners in the region in oil extractions, their mandate can be extended to defence sector as well.
14. In a Personal Interview conducted with a Defence Official who was actively involved in the creation of 101 negative list and Defence Procurement Procedure Report 2020 and Defence Acquisition 2020 report but who wished to remain anonymous; *See also:* Manjari Singh (2021), "Navigating Indian Defense Outreach with the Gulf", Fikra Forum, Washington Institute, 7 April 2021. Available online at https://www.washingtoninstitute.org/policy-analysis/navigating-indian-defense-outreach-gulf, accessed on April 10, 2021.

15. "Boosting Defence Exports: India-UAE Agree to Further Defence Cooperation Through Joint Production and Mutual Trade", Press Interest Bureau (PIB), 28 October 2020. Available online at https://pib.gov.in/PressReleasePage.aspx?PRID=1668099, accessed on March 29, 2021.
16. Dipanjan Roy Chaudhary (2018), "PM Modi's Oman Visit: Indian Navy Can Now Access Duqm Port", *The Economic Times*, 13 February 2018. Available online at https://economictimes.indiatimes.com/news/defence/pm-modis-oman-visit-navy-can-now-access-duqm-port/articleshow/62894357.cms, accessed on March 29, 2021.

Book Review

India's China Challenge: A Journey Through China's Rise and What It Means for India
Ananth Krishnan



HarperCollins Publishers, Noida, 2020,
ISBN 9789390327683, 435 pp, Rs 599

Amrita Jash

In rhetorics, India-China relations are largely perceived to be pivoted in the bedrock principle of *Panchsheel*—the vision of "Peaceful co-existence". With the 1962 War resulting into the departure from the sloganeering of "Hindi-Chini Bhai Bhai", the 70 years of the India-China ties have staggered over time and have increasingly become volatile as witnessed with the 2020 military stand-off in Eastern Ladakh. With the ties reaching its lowest, the unsettled border dispute holds a greater bearing on the ties-difficult to delink from the overall bilateral ties. With new differences added to the old dispute, the bilateral ties have become fragile with time despite the relative peace. Most precisely, what provides the context to the book are the three key situational factors: First, 2020, marked the seventh anniversary of the India-China diplomatic ties; second, the spread of the COVID-19 pandemic from the Wuhan epidemic; and finally, the violent scuffle in Galwan Valley in Eastern Ladakh. These circumstances make

Dr. **Amrita Jash** is Research Fellow at Centre for Land Warfare Studies, New Delhi.

Ananth Krishnan's book on *India's China Challenge* both timely and topical given its comprehensive outlook.

What makes the book an interesting read is its articulation. Taking a closer look at China from 2008-2018 being a Beijing-based Indian Journalist for *The Hindu* and then *India Today*, Ananth Krishnan in his book has cogently put forward the criticalities of the Chinese state with lucidity. What makes the author's interventions significant is that it is heavily drawn from personal interactions and interviews with Chinese scholars, political elites, businessmen and Chinese public; extensive travel to Chinese provinces—especially to Tibet and Xinjiang; and most importantly, the author's command over mandarin; and most importantly, his personal experience from his decade long stay in China—thus, making the book a primary study based on the ground-perspective of an Indian Journalist.

In this regard, the book tries to capture India's China challenge from four key perspectives: the political challenge of dealing with a one-party state; the military challenge of managing an unresolved dispute; the economic challenge of learning from China's growth story and building a closer relationship; and finally, the conceptual challenge of how India perceives and engages with China. In this regard, the book has been divided into six themes—politics, economy, diplomacy, history, frontiers and portraits, which are encompassed under 24 chapters with an epilogue. Having a broad canvas, what makes the book interesting is the fact that the very interpretation of India's China Challenge is drawn from the way the Chinese elite/opinion-makers view India. This is complemented by the comprehensive understanding of China that is undergoing a critical transition under the leadership of Xi Jinping in all dimension—political, social, economic and the military. Owing to which, the book very well captures the divide—the Chinese state under Mao Zedong and Deng Xiaoping and how it has evolved both in character and form since China's rise. On the whole, the book delves on the pointed query: What China's

many transformations mean for India? In answering the query, Krishnan's insider view brings into perspective the oblivious attitude of Indians in knowing its biggest neighbour, whose political, economic and social transformations affect and will continue to affect the lives of Indians, in ways not always realised. Therefore, Krishan's book highlights the need to 'know China' as only then one can estimate 'how big a challenge it is to India'.

To conclude, the volume makes a strong case of bringing to attention India's China Challenge from the vantage of an insider view drawn from a Chinese understanding, which makes it the strongpoint. Besides, the author's eclectic approach provides the book with a comprehensive outlook. However, although the book justifies that China has embarked on its transitional path to power, but there still remains a marked uncertainty in predicting as to what the trajectory would look like and most precisely, how will it shape the contours of India-China ties. To say so, given the uncertainty and the fallout of events, there still remain significant caveats in gauging the transition of the ties. What calls for a significant deliberation is the query: To deal with the China challenge, what should be India's China Policy?

In an overall analysis, the book is comprehensive, well-articulated, written in a lucid style and makes a significant value addition to the existing literature on Chinese studies. With its broad spectrum of assessment, the book is a necessary read for students of international relations, academicians, policymakers and anyone who is keen on understanding China from within and how it impacts India-China ties.

Notes for Contributors

General

The CLAWS Journal welcomes professional articles on warfare and conflict, national security and strategic issues, especially those related to the art and science of land warfare including sub-conventional conflict in the Indian context. Articles may be submitted by serving and retired members of the armed forces as well as civilians in India and abroad. Articles on aerospace and maritime issues and those on foreign policy and international relations having a bearing on land warfare are also welcome. The Journal particularly encourages articles from younger members of the armed forces.

Manuscripts: Contributors should submit their manuscripts (main articles, commentaries, review articles and book reviews) by e-mail, with one hard copy being sent separately by post. All material must be original, unpublished and should not have been submitted for publication elsewhere. Main articles must have a length of 3,000 to 6,000 words. Commentaries and review articles must not exceed 1,500 to 2000 words.

Book Reviews: Book reviews must contain the name of the author, the title of the book reviewed, particulars of the publisher, place and date of publication, number of pages and price. Authors who wish to have their book considered for review should ask their publisher to send a copy to the Editor, CLAWS Journal.

Submission: Since manuscripts will be sent out anonymously for peer review, the authors should omit their identity from the manuscript. The author's name, rank, unit/institutional affiliation, e-mail ID, postal address and telephone number should be submitted on a separate cover page. Each article must be accompanied by an abstract of about 250 to 300 words. A four to five line (or 75 words) biographical note describing the author should accompany the manuscript. Manuscripts should be typed in double space, including endnotes and references, with 1.5 inch (3.0 cm) margins, on one side of A4 size paper.

Acceptance and Revision: Intimation regarding suitability of the article for publication will be given within 30 days of its receipt in normal cases. Articles not accepted for publication will not be returned. The Editorial team reserves the right to edit articles for better clarity and to ensure that the style conforms to the style of the CLAWS Journal. However, views expressed by an author will not be altered. Authors should be prepared to revise their manuscript based on the suggestions made by the reviewers and the editorial team.

Honorarium: A suitable honorarium will be paid for articles accepted for publication. The CLAWS Journal may also commission articles from time to time.

Mandatory Certificates

- Retired armed forces officers and civilian authors should submit a certificate of originality, clearly stating that the article is original and unpublished and has not been submitted for consideration elsewhere.
- Serving members of the armed forces must submit the necessary clearance certificates in terms of the relevant rules and regulations pertaining to their respective Services.
- Serving army officers must submit three certificates.
  - ❖ First, a certificate of originality, clearly stating that the article is original and unpublished and has not been submitted for consideration elsewhere.
  - ❖ Second, a certificate from the author stating that s/he has not used any official information or material obtained in an official capacity while writing the article submitted.
  - ❖ Third, a certificate from her/his Superior Officer stating that there is no objection to the publication of the article.
  - ❖ The format of the latter two certificates is given in Para 21 (a) and (b) of SAO 3/S/2001/MI.
- Responsibility for obtaining Army HQ DGMI (MI-11) clearance in respect of articles pertaining to subjects specified in Paras 13 and 14 of SAO 3/S/2001/MI, will be that of the officer herself/himself.

Style of the Journal

Clarity: Articles should be written in a clear and lucid style. Sentences should be kept short. The use of too many adjectives should be avoided. The most complex ideas can be expressed in simple language. Paragraphs should also be short.

Use of Pronouns: Articles should be written in third person. Writing in first person should be avoided completely—unless the author is over 65 years old!

Spelling: Use British, not American spellings. Thus, use "humour," not "humor," and "programme," not "program." Where alternative forms exist, choose "-ise" instead of "-ize" or "-isation" instead of "-ization" spellings. Thus, use "modernise," "stabilise", "modernisation," "stabilisation," etc.

Quotations: Quotations must be placed in double quotation marks, reserving single quotation marks for a quote within a quote. Long quotes (i.e., four lines or more) should be indented, without quote marks, to set them apart from the text.

Abbreviations:
- All abbreviations must be given in full at their first use in the text; for example, Comprehensive Test Ban Treaty (CTBT).
- Abbreviations should include a final stop in words shortened by omitting the end (such as p., ed., vol.) but not in contractions (words such as Mr, Dr, edn, eds) or between capitals, e.g., USA, SAARC, UN.
- Avoid using "i.e." and "e.g." in the text but use them in the notes if you wish.
- Do not use military abbreviations such as "ops", "int" and "adm" as the CLAWS Journal will have a civilian as well as an international readership. However, those such as CI (counter-insurgency), IS (internal security) and CPMFs (central police and para-military forces) may be used after being given in full at their first use.
- Abbreviated military ranks may be used; e.g., Lt Col, RAdm and Wg Cdr.

Headings and Parts: The only centre heading should be the title of the article. Refrain from dividing an article into several parts. Avoid too many headings, as is the norm in Service writing. While group headings are the norm (bold but not underlined), paragraph headings are best avoided.

Sub-paragraphs and sub-sub-paragraphs:
- Avoid writing in sub-paragraphs unless it is inescapable – e.g. a list needs to be provided.
- Even then, write in complete sentences and not in point form under sub-paragraphs.
- Do not write in sub-sub-paragraphs under any circumstances.

Highlighting Words: Use capitals, bold and italics sparingly but consistently. Italics should be used for titles of books, newspapers, journals and magazines as well as for foreign words not in common usage.

Numbers: Numbers from one to nine should be spelt out, 10 and above will remain in figures; hence, "seven" not "7" and "17" not "seventeen". However, figures should be used for exact measurements (such as "5 per cent," "5 km" and "5-year-old child"). Use "thousand" and "million," not "crore" and "lakh" as the Journal will have international readers. Use fuller forms for inclusive numbers in the case of dates and page numbers (such as "1971-72" and pp. "260-65"). In the text use "per cent", in tables the symbol "%."

Figures and Tables: Figures and Tables should be presented on separate sheets of paper and collected at the end of the article while mentioning the location in the article. Figures and Tables must be numbered in separate sequences, i.e., "Fig. 1" and "Table 1" and the titles should be short and crisp. Copyright permission for reproducing figures or photographs that have been cited from other works must be obtained.

Endnotes and References: Endnotes and References should be amalgamated and marked serially in the text of the article by superscript 1, 2, 3, etc.

Referencing Style: References should be typed in the form of the following example on first appearance:

(a) **Books:**
Michael Foucault, *The Archaeology of Knowledge* (London: Routledge, 1989), p. 26.

(b) **Edited Volume:**
James Der Derian (ed), *International Theory: Critical Investigations* (New York: New York University Press, 1995).

(c) **Articles in Journals:**
Samina Yasmeen, "Pakistan's Kashmir Policy: Voices of Moderation?," *Contemporary South Asia*, Vol. 12, No. 2, June 2003, pp. 187-202. In case of two journals having a similar title, the place of publication must be mentioned, e.g., International Affairs (London) and International Affairs (Moscow).

(d) **Articles in Edited Volumes:**
Tom Nairn, "The Curse of Rurality: Limits of Modernisation Theory" in John A. Hall (ed), *The State of the Nation: Ernest Gellner and the Theory of Nationalism* (Cambridge: Cambridge University Press, 1998), pp. 107-34

(e) Articles in Newsmagazines: Gurmeet Kanwal, "Pakistan: On the Brink," *The Week*, November 4, 2007, p. 45.

(f) Articles from Newspapers: M. K. Bhadrakumar, "New Regionalism in Central Asia," *The Hindu*, July 14, 2004.

(g) References to Websites: United Nations Development Programme, "Arab Human Development Report 2003", http://www.undp.org/rbas/ ahdr/english2003.html, accessed on October 27, 2007.

(h) Reports and Documents:
- United Nations, UNCED, The Global Partnership for Environment and Development (New York: United Nations, 1992).
- Canberra Commission, Report on the Elimination of Nuclear Weapons (Canberra: Commonwealth of Australia, 1996). Available on the Internet at <http://www.dfat.gov.au/cc/cchome.html>

(i) Conference Papers:
Michael Williams, "The Discursive Power of Community: Consideration on the European 'Security Community'", Draft Paper presented at the conference on Power, Security and Community: IR Theory and the Politics of EU Enlargement, Copenhagen October 9-12, 1997.

(j) Unpublished Theses and Dissertations:
Christopher Strawn, "Falling of the Mountain: A Political History and Analysis of Bhutan, the Bhutanese Refugees and the Movement in Exile", Dissertation submitted to the University of Wisconsin, USA, 1993, Chap. 4.

On subsequent reference (unless immediately following the first reference, in which case Ibid. will be used) please use n. with the number of the note given earlier e.g. n.1, n.2.

Five offprints of each article will be provided to the author and in case of more than one author, to the senior author. A complimentary copy of the printed journal will be provided to each author.

Mailing Address: All manuscripts should be addressed to:

The Managing Editor
CLAWS Journal
Centre for Land Warfare Studies
RPSO Complex, Parade Road
New Delhi 110010, India
Tel: +91-11-25691308
Email: clawsjournal@gmail.com
Website: www.claws.in

To
The Director
Centre for Land Warfare Studies (CLAWS)
RPSO Complex, Parade Road
Delhi Cantt, New Delhi 110010

APPLICATION FOR INSTITUTIONAL MEMBERSHIP

Please tick any one:-

☐ **5 Years Institutional Membership (Rs 10,000/-)**
☐ **10 Years Institutional Membership (Rs 20,000/-)**

Sir,

I would like to apply for Membership of the Centre for Land Warfare Studies. I understand that my membership is subject to the approval of the Director. If approved, I will respect and follow the rules and regulations of the CLAWS (as amended from time to time).

Name of Institution .....
Address: .....
.....
.....
Phone/Mobile:.....Fax: .....
Email:.....

Mode of Payment

1. A Demand Draft/multi-city cheque No……dt…… of …… Bank for Rs **…….**in favour of **CLAWS payable at Delhi Cantt** is enclosed herewith.

OR

2. **NEFT:** Bank of Name – Syndicate Bank, 22 Thimmayya Marg, Delhi Cantonment, New Delhi 110010, Saving Account No – 91162010005981, IFS Code – SYNB0009008.

Dated …… ……

(With Institutional Seal) **(Signature of Applicant**

Note: The application form can also be forwarded through email at clawslibrary@yahoo.com)

FOR OFFICE USE ONLY

Multi-city Cheque/DD Details:.....
Membership No.: .....Date of Issue of Membership Card:.....
Remarks of Deputy Director: .....
Remarks of Director:.....

SCHOLAR WARRIOR

SUBSCRIPTION RATES

IN INDIA
☐ Rs. 500 /- per copy

SAARC COUNTRIES
☐ US $ 15 per copy

OTHER COUNTRIES
☐ US $ 20 per copy

☐ Rs. 1000 /- Annual Subscription (2 issues)

Please Print

Name .....
Complete Address .....
..... Pin .....Phone .....
Please find enclosed cheque/draft number.....dated .....
drawn on .....Favouring Centre for Land Warfare Studies
for Rs. / US$ .....

Please mail this form to: Centre for Land Warfare Studies (CLAWS),
RPSO Complex, Parade Road, Delhi Cantt, New Delhi - 110010
Tel: +91-11-25691308 • Fax: +91-11-25692347 • Army: 33098
E-mail: landwarfare@gmail.com

Note: Kindly add Rs. 50.00 as bank charges for outstation cheques

CLAWS JOURNAL

Journal of the Centre for Land Warfare Studies

CLAWS JOURNAL

Journal of the Centre for Land Warfare Studies

CLAWS JOURNAL

SUBSCRIPTION RATES

IN INDIA	SAARC COUNTRIES	OTHER COUNTRIES
☐ Rs. 500 /- per copy	☐ US $ 15 per copy	☐ US $ 20 per copy

☐ Rs. 1000 /- Annual Subscription (2 issues)

Please Print

Name .....
Complete Address .....
..... Pin .....Phone .....
Please find enclosed cheque/draft number ..... dated .....
drawn on .....Favouring Centre for Land Warfare Studies
for Rs. / US$ .....

Please mail this form to: Centre for Land Warfare Studies (CLAWS),

RPSO Complex, Parade Road, Delhi Cantt, New Delhi - 110010
Tel: +91-11-25691308 • Fax: +91-11-25692347 • Army: 33098
E-mail: landwarfare@gmail.com

Note: Kindly add Rs. 50.00 as bank charges for outstation cheques

CLAWS JOURNAL

SUBSCRIPTION RATES

IN INDIA	SAARC COUNTRIES	OTHER COUNTRIES
☐ Rs. 500 /- per copy	☐ US $ 15 per copy	☐ US $ 20 per copy

☐ Rs. 1000 /- Annual Subscription (2 issues)

Please Print

Name .....
Complete Address .....
..... Pin .....Phone .....
Please find enclosed cheque/draft number ..... dated .....
drawn on .....Favouring Centre for Land Warfare Studies
for Rs. / US$ .....

Please mail this form to: Centre for Land Warfare Studies (CLAWS),

RPSO Complex, Parade Road, Delhi Cantt, New Delhi - 110010
Tel: +91-11-25691308 • Fax: +91-11-25692347 • Army: 33098
E-mail: landwarfare@gmail.com

Note: Kindly add Rs. 50.00 as bank charges for outstation cheques

CLAWS INITIATIVES

Centre for Land Warfare Studies

MANIPAL
ACADEMY of HIGHER EDUCATION

The Centre for Land Warfare Studies (CLAWS) has established a joint initiative with Manipal Academy of Higher Education (MAHE), Manipal, formerly known as Manipal University, to conduct PhD programme for the Army Officers. CLAWS has taken this initiative with a view to further enhance the professional military education (PME) of officers, as also to prepare a pool of officers for instructional duties in Army Institutions.

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

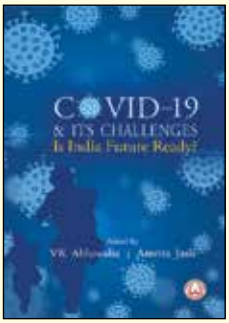
CLAWS-MAHE UNIVERSITY CELL

In an endeavour to build on Strategic Culture, CLAWS had invited young Scholars from Universities to participate in the **Field Marshal Mankeshaw Essay Competition (FMMEC)** on National Security and Strategic Studies by submitting and presenting their research essays. The competition was aimed to cover a wide range of issues pertaining to National security.

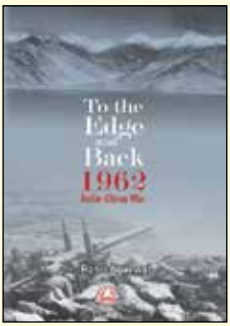
We are overwhelmed with the response we received from the university students across India. This shows the commitment of younger generation who have immense interest in National Security and Strategic Studies.

FIELD MARSHAL MANEKSHAW ESSAY COMPETITION (FMMEC)

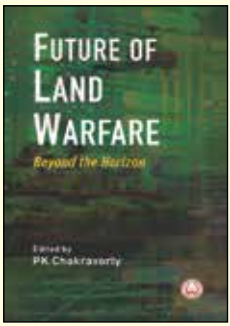
PUBLICATIONS



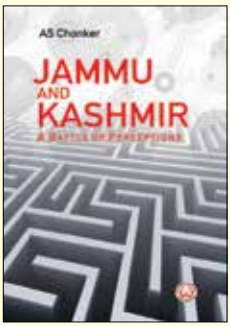
Covid-19 & Its Challenges: Is India Future Ready?
VK Ahluwalia & Amrita Jash (Eds.)
₹ 750 (HB)
₹ 450 (PB)



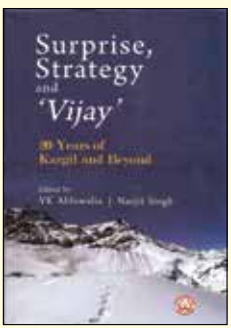
To the Edge and Back: 1962 India-China War
Rohit Agarwal
₹ 895



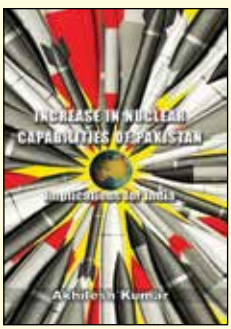
Future of Land Warfare: Beyond the Horizon
PK Chakravorty (Ed.)
₹ 995



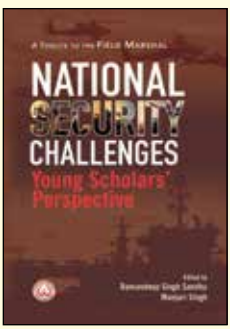
Jammu and Kashmir: A Battle of Perceptions
A S Chonker
₹ 1295



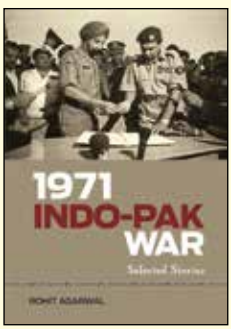
Surprise, Strategy and *'Vijay'*: 20 Years of Kargil and Beyond
VK Ahluwalia and Narjit Singh (Eds.)
₹ 1195 (HB)
₹ 595 (PB)



Increase in Nuclear Capabilities of Pakistan: Implications for India
Akhilesh Kumar
₹ 720



National Security Challenges: Young Scholars' Perspective
Ramandeep Singh Sandhu & Manjari Singh (Eds.)
₹ 995 (HB)
₹ 495 (PB)



1971 Indo-Pak War (Selected Stories)
Rohit Agarwall
₹ 480