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Postal Address :

Rao Tula Ram Marg, (opposite Signals Enclave)
Post Bag No 8, Vasant Vihar PO, New Delhi-110057
Telephone Nos. : **Exchange** - +91-11-26146755/56

DD (Adm) +91-11-26146490 **DD&E** +91-11-26154720

DD (Research) +91-11-26146774 **Secretary (CAFHR)** +91-11-26147464

Course Section - +91-11-26148682,

CI +91-11-26146390 **Fax** : +91-11-26149773

e-mail : director@usiofindia.org

dde@usiofindia.org cs3@usiofindia.org

ddadm@usiofindia.org ci@usiofindia.org

cafhr@usiofindia.org library@usiofindia.org

Website : www.usiofindia.org

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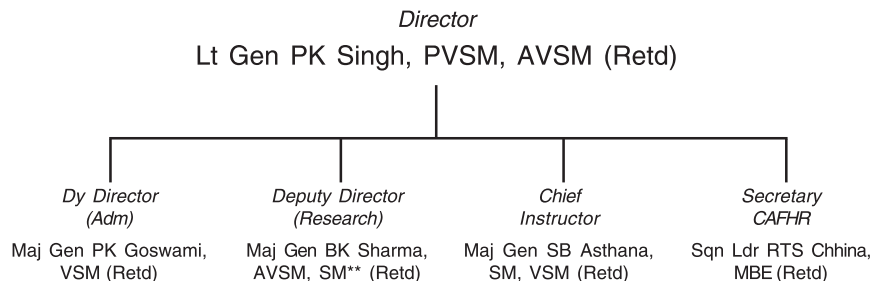
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Seminar Room-2	8,000	5,000	2,000	2,000	1,500
Seminar Room-3	5,000	3,500	1,500	1,500	1,500
Seminar Room-4	8,000	5,000	1,500	1,500	2,000

RATE OF SUBSCRIPTION FOR USI JOURNAL

The USI Journal has been digitised and can be accessed at www.usiofindia.org. Dispatch of hard copies to the members has been discontinued, however, Formation Headquarters, Units, Messes, Libraries and individuals can subscribe to the USI Journal at the rates as under :-

- (a) Single copy - Rs 300/- plus Rs 40/- postal/ packing charges
- (b) Yearly subscription (four issues) - Rs 1100/- plus Rs 160/- postal/ packing charges
- (c) There is no life time subscription, however, 20 years subscription can be subscribed for Rs 20,000/- including postal charges.

Editor

USI CORRESPONDENCE COURSES

1. The USI conducts correspondence courses for DSSC – Army and Navy, TSOC (Army) Entrance Examinations and Promotion Examinations Parts B and D.
2. The Courses have been remodelled to make it more interactive and the admission procedure has been simplified to make it user friendly.
3. Membership of the USI is mandatory to join any correspondence course.
4. Schedule of Correspondence Courses 2018-19.

Courses	Commencement of Course	Date of Exam	Cost All Subjects	Cost Per Subject
(a) DSSC (Army)	3 rd Week of Nov 2018. Registration Open for 2019	Sep 2019	Rs 8000/-	Rs 2400/- for Tac B Rs 1800/- each for MH & CA Rs 1500/- for SMT Rs 1300/- for Tac A Rs 1200/- for ADM & ML
(b) DSSC (Navy)	3 rd Week of Jan 2019	Jul 2019	–	Rs 1500/- for Paper-1
(c) Part B	2 nd Week of Dec 2018. Registration Open for 2019	Jun 2019	Rs 3000/-	Rs 1000/- each for MH & CA Rs 800/- for Tac Rs 600/- each for Adm & ML
(d) Part D	2 nd Week of Apr 2019. Registration Open for 2019	Oct 2019	Rs 4000/-	Rs 1200/- each for MH & CA Rs 1000/- each for Tac, Adm and ML

5. **Contact Programmes.** Three contact programmes for DSSC/Army-2019 have been planned. Dates are : **24-29 Jun 2019, 08-13 Jul 2019** and **22-27 Jul 2019**. Separate test papers will be set for each programme. Fees – Rs 6000/- per contact programme.
6. Correspondence courses for Special to Corps subjects are not conducted.
7. **Mode of Payment.** Local/multicity cheque or bank draft payable at New Delhi in favour of *Director USI of India* or cash or Bank Transfer.
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10. Visiting hours : 1000 AM to 1230 PM } Monday to Friday
1400 PM to 1600 PM }
11. Telephones : Chief Instructor - 26146390
Course Section - 26148682, 26146756 Extn 210
12. Prospectus and Forms : Available on Website and from Course Section.

MEMBERSHIP FEES

	Entrance	Subscription	Total
Life Membership (20 Years)			
Armed Forces	3000	9000	12000
Civilian	3000	12000	15000
Ordinary Membership[£]			
Armed Forces	1000	3000	4000
Civilian	1000	4000	5000
Associate Membership[£]	3000	5000	8000
Course Membership*	900	600	1500
See USI website : www.usiofindia.org for details and form			

[£] (For 3 years commencing 01 Apr)

* (One Year for One course only)

ARTICLES FOR USI JOURNAL

1. Members are welcome to forward original articles pertaining to national security and defence matters for publication in the USI Journal. **Articles should preferably not exceed 2,500 words.** Along with the article, the author should forward abstract of the article not exceeding ten per cent of the total words. These should be forwarded in double space on A-4 size paper, along with a CD/DVD as a Word document. The articles should be sent to the Editor, United Service Institution of India, Rao Tula Ram Marg, Post Bag No. 8, Vasant Vihar PO, New Delhi-110057. Alternatively, articles may be sent through e-mail on dde@usiofindia.org. The author should render a certificate that the article has neither been previously published in print or online, nor has it been offered to any other agency for publication. The Editor reserves the right to make alterations.
2. It is mandatory that the author furnishes complete details of the book/journal referred to in the article as end notes. This should include full name of the writer of article/book referred to, title of book/article, journal in which published (in case of articles); issue details, and page numbers. A guide to writing endnotes is given on the next page. Besides endnotes, if the author so desires, a bibliography may also be included, though not mandatory.
3. Abbreviations if any, should be used in their expanded form the first time and indicated in brackets.
4. The full name and address of the author along with a brief Curriculum Vitae should be given. Serving officers are advised to follow the prevailing Services instructions for publications of their articles.
5. The author will receive a copy of the issue of the Journal in which his/her article appears along with three offprints. A suitable honorarium will also be paid after the article is published.

GUIDE TO WRITING ENDNOTES

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

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

² Lina Bolzoni and Pietro Corsi, *The Culture Memory*, (Bologna : Societa editrice il Mulino, 1992), p. 45.

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

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

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

⁵ *Ibid.*, p. 9.

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

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

⁸ Eliot, *op. cit.*, p.148.

⁹ Eliot, *loc. cit.*

3. Where websites have been used to access information, the complete web address of the website should be cited, followed by the date the website was accessed by the author. For example :-

<http://www.fordham.edu/halsall/mod/1497degama.html>.
Accessed on 06 January 2016.

Additions to the USI Library for the Quarter Ending Dec 2018

During this period a total of 04 new books have been added. Details of the new books are available on USI Website.

Research Projects

Members interested in undertaking research projects may submit research proposals to USI (CS3 / CAFHR). At present, six chairs have been instituted in CS3; namely, Field Marshal KM Cariappa Chair, Admiral RD Katari Chair, Air Marshal Subroto Mukherjee Chair, Prof DS Kothari DRDO Chair, Ministry of External Affairs Chair, Flying Officer Amandeep Singh Gill Chair and two Chairs in CAFHR namely; Maharana Pratap Chair and Chhatrapati Shivaji Chair. Copies of the Rules for Award of Fellowship Grants and Conduct of Research are available on the USI Website.

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Full Page	Rs. 2,500/-	Rs. 12,000
Four Consecutive Full Pages	Rs. 8,000/-	Rs. 44,000
Half Page	Rs. 1,500/-	Rs. 12,000
Four Consecutive Half Pages	Rs. 5,000/-	Rs. 44,000

New USI Members

During the period Oct – Dec 2018, 17 registered as New Life Members ; one Ordinary Member renewed membership and 18 registered as new Ordinary Members.

Course Members

During Oct-Dec 2018, 232 Officers registered for Course Membership.

CONTENTS

October-December 2018

From Director's Desk.....	427
Editorial.....	434
Security Strategies for India as an Emerging Regional Power with Global Ambitions	
Shri Shivshankar Menon, IFS (Retd).....	441
Impressions of Visit to Chengdu and Tibet Regions of China	
Major General BK Sharma, AVSM, SM and Bar (Retd).....	463
US - China Heated Cold War finds Taiwan as a Sensitive Spot	
Major General S B Asthana, SM, VSM (Retd).....	471
India-Japan Collaboration in the Indo-Pacific	
Asoke Kumar Mukerji.....	480
Achieving the Asian Century: Challenges and Options	
Major General Rajiv Narayanan, AVSM, VSM (Retd).....	490
Nepal — A Paradise Between a Rock and a Hard Place	
Lieutenant General Ghanshyam Singh Katoch, PVSM, AVSM, VSM.....	505
The Belt and Road Initiative of China: Security Implications for India and the Indo Pacific Region and Response Strategies	
Captain T Sugreev, IN.....	513
India - A Net Provider of Security in Indian Ocean Region (IOR) - A Roadmap	
Major SK Misra.....	541
Tactical Nuclear Weapons: Myths and Realities	
Air Commodore Rippon Gupta.....	555
Next Generation Air Dominance	
Air Marshal Anil Chopra, PVSM, AVSM, VM, VSM (Retd).....	563
UAVS – The Silent Force Multipliers in Future Air Defence Operations	
Lieutenant Colonel Piyush Kumar Sanwal.....	574
Manned and Unmanned Teaming - Scaling New Frontiers	
Lieutenant General VK Saxena, PVSM, AVSM, VSM (Retd).....	584
Review Articles.....	593
Reviews of Recent Books.....	597

NOTE

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

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- (g) Use of Gym.
- (h) Laundry (2 pieces)

Terms

- (a) Officers would be required to book their accommodation at USI Residency by post or e-mail at least 24 hours in advance and obtain a confirmation.
- (b) Check-in time is 1300 hours and the check out time is 1200 hours.
- (c) Payment in advance or on arrival.

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(x)

From Director's Desk

The USI is a unique, autonomous Institution with unequalled expertise in the field of National Security and matters pertaining to the Defence Services. It has built an outstanding reputation over the last 148 years. During the year 2018, the USI continued with its multi-faceted activities which included a focus on quality research; participation in national and international seminars; conduct of strategic gaming exercises; a growing internship programme; participation in peacekeeping / peacebuilding activities, catering to the professional advancement of serving officers by conducting correspondence courses and contact programmes for the DSSC entrance examinations and promotion examinations; and a robust international outreach programme. The activities conducted by the Institution would stand out when compared with any other institution/think tank in our country. And all of this was done without the Institution getting any grant or aid from the Ministry of Defence or the Services. Keeping our financial needs in mind a proposal for a one time grant of Rs.10 crores has been sent to Headquarters Integrated Defence Staff on 29 Aug 2018, for approval of COSC.

The USI library with a collection of over 69,000 books, some dating back to 16th and 17th Centuries is a storehouse of knowledge and archival material. During the period Nov 2017 – Nov 2018, a total of 428 books have been added to the library. The popularity of our website is evident from the fact that it received a total of 21,22,928 hits during the period Jan – Nov 2018.

Our focus on research leading to publication of books / monographs continues unabated. Since the year 2009 we have published over 149 books and monographs which include 19 published during the current year.

The Centre for Strategic Studies and Simulation (CS3) continues to work hard to achieve new milestones in the field of research, net assessment and strategic gaming exercises. I am proud to highlight that the Centre has expanded on the quality and content of its research on strategic affairs. The Centre undertook one study project for the Headquarters Integrated Defence Staff (IDS) named, "Scenario Building and Scenario Analysis: China's Infrastructure Development in Nepal and its Security Implications

for India". During the year, two Strategic Gaming Exercises were conducted, one for National Defence College, New Delhi and one for Army War College, Mhow. The feedback received from these prestigious institutions has been most encouraging. We will continue in our endeavour to spread awareness of the strategic issues to the operational and field levels of the three Services.

We conducted the Annual National Security Seminar on the subject "Evolving Geopolitics of the Indo-Pacific Region – Challenges and Prospects" at USI, New Delhi on 01 and 02 Nov 2018. Twelve countries including India (Canada, China, Germany, Japan, Myanmar, Russia, South Korea, Sri Lanka, Sweden, Taiwan and Vietnam) participated in the Seminar.

USI organised and participated in various bilateral/multilateral national and international interactions. We sent a three-member delegation to Kabul, Afghanistan to participate in the "4th Afghanistan – India Security Dialogue" jointly organised by Afghan Institute of Strategic Studies and the USI. CS3 also conducted an 'Internship Programme' for students from Christ University, Bengaluru; Symbiosis School for Liberal Arts, Pune; PDPU, Gandhinagar; O.P. Jindal Global University, Haryana, and Delhi University. We continue to encourage our scholars to write for our digital webpage 'Strategic Perspectives' and our 'Blog'. During this year a total of 246 articles were posted on our Blog and nearly 50 articles in Strategic Perspective at USI's digital website.

During the year 2018, the Centre for Armed Forces Historical Research (CAFHR) continued with its multi-faceted activities which included the "India Remembers Projects", "India and the Great War Project", and the "Rereeti Project" which also highlighted India's contribution to the First World War.

To honour the sacrifice of Indian servicemen, the USI conceptualised the plans for the Indian Great War Military Memorial in collaboration with the commune of Villers-Guislain, France, the Indian Armed Forces and the Ministry of External Affairs, Govt of India. The Hon'ble Vice President of India, Shri Venkaiah Naidu, inaugurated the Indian Great War Military Memorial at Villers-Guislain on 10 Nov 2018. The Director USI, Lt Gen PK Singh, PVSM, AVSM (Retd), attended the ceremony on behalf of the

Institution. The memorial in France is located near the battlefield where Lance Dafadar Gobind Singh won the Victoria Cross for his death defying deeds of valour on 1st December 1917. Two photographs taken during inauguration of Indian Great War Memorial appear on pages 432-433 of the Journal.

Apart from the Indian Great War Military Memorial, the USI-CAFHR supported the initiative of installing a plaque to commemorate the contribution of the Indian Labour Corps in France.

To mark the end of the WW1 Centenary, the USI-CAFHR organised a series of events from 9-11 November 2018 in collaboration with the British High Commission, New Delhi. A commemorative military band concert followed by a reception was held at the British High Commissioner's residence on the evening of 10 Nov 2018. At the reception WW1 Indian Army War Diaries were presented by General VN Sharma, PVSM, AVSM (Retd) to the former Colonels of the Regiments.

After the success of the first Staff Ride, USI-CAFHR conducted a two day Staff Ride focused on the Chhamb battles of 1965-1971. It was organized at Kachreal, Jammu jointly in collaboration with the Directorate General of Military Operations. The Staff Ride was conducted by Maj Gen Ian Cardozo, AVSM, SM (Retd), Chairman of the Centre's Board of Management and Maj Gen AJS Sandhu, VSM (Retd) in Sep 2018. It was attended by officers of 10 Infantry Division.

The USI-CAFHR assisted the Bangladesh National Museum (BNM) to reorganize and renovate its permanent exhibition galleries (four in numbers) relating to the War of Liberation of 1971 and the Museum of Independence it operates. The CAFHR also curated a travelling exhibition for the Embassy of India, Paris. This exhibition has travelled to 18 different locations across France and Belgium.

To commemorate the centenary of the end of the First World War, the In Flanders Fields Museum, Ypres curated an exhibition 'assembly-memorial chairs'. The exhibition, which was displayed in the heart of Ypres, Belgium on the final commemorative weekend of 9-11 November 2018, had empty chairs as its central image. Each country that participated in the First World War sent a chair that represented the loss the war left in the homes of the families.

On behalf of India, the USI-CAFHR was invited to send a chair. The chair we chose had a distinct Indian appearance and represented those Indian soldiers who died in Flanders.

The USI continued working on policy and doctrinal related issues of peace operations that include conflict prevention, peacemaking, peacekeeping, peacebuilding and peace-enforcement. These were mentored by Shri Asoke Mukerji, IFS (Retd), Lt Gen Chander Prakash (Retd), Lt Gen Abhijit Guha (Retd) and the Director, and were supported by former distinguished Blue Berets. The USI also actively supported the Centre for UN Peacekeeping in conducting its courses. As in the previous years, we continued to strengthen our linkages with partner institutions at the international level.

We conducted an International Integrated Programme on 'Mainstreaming Gender in UN Peacekeeping to End Conflict Related Sexual Violence (CRSV)' 05-08 Feb 2018. As a founding partner of the Challenges Forum we actively participated in the events hosted by the Forum throughout the year.

In order to make peace operations more effective, NUPI, Norway, with partner institutions from 15 countries including the USI have established an international research network known as "Effectiveness of Peace Operations Network (EPON). The Director and Lt Gen A Guha (Retd), former Dy MILAD at UNDPKO and Member of the Horta Panel have been in discussions with the partner institutions. Lt Gen Guha also participated in the EPON Seminar held at the UN, New York on 04 Dec 2018 and at the General Meeting of the EPON at the New York University on 05 Nov 2018.

The USI supported by the MEA (UNP) organised a Roundtable Discussion with a visiting US delegation led by Mr Mike Smith, Director Global Program and Initiatives, US Department of State. The aim of the meeting was to discuss issues pertaining to Peacekeeping at the strategic level and to examine the possibility of increasing India-US partnership in this regard.

Like the previous years, the course section under Maj Gen SB Asthana, SM, VSM (Retd) is continuing to do excellent work towards the professional advancement of the serving officers and helping them prepare for their promotion examinations and for the

DSSC/TSOC entrance examinations. The results achieved this year too were outstanding. The Chief Instructor and the team of dedicated serving and retired officers deserve commendation for the yeoman service that they are rendering.

Maj Gen PK Goswami, VSM (Retd), Deputy Director (Administration) and his team from the Administrative Branch have worked silently and tirelessly to support all the activities undertaken by the USI. I would like to take this opportunity to record my appreciation to the team for their utmost dedication and the excellent work done by them.

I would also like to acknowledge the excellent services provided by the Residency Resorts to the members, visitors and delegations. I commend the staff of Residency Resorts for their efficiency, politeness and thank them for the excellent services being provided by them.

Finally, I thank the esteemed members of the USI, who have been actively participating in activities organised by our prestigious Institution in the year gone by. It gives us great pleasure and satisfaction when we have good participation especially from the serving community at events organised by us. The attendance is of mutual benefit. I urge members to spread a word around about the activities planned by us and encourage others to also attend. We also welcome attendance by others who are not members of the USI.

May I request you to regularly access and browse the USI Website: www.usiofindia.org to keep yourself updated on activities conducted /planned. We greatly value suggestions and feedback. Should there be any, they could be conveyed to the Deputy Director and Editor or the Deputy Director Administration by email or post. We also look forward to meeting and interacting with you in person whenever you come to the USI.

The staff of USI and I wish you and your families “A VERY HAPPY NEW YEAR” and we pray for your happiness and good health in the coming year.

With best wishes,

Lieutenant General PK Singh, PVSM, AVSM (Retd)
Director USI



Indian Great War Military Memorial in France inaugurated on 10 Nov 2018. It commemorates the men of the Indian Army who fell on the Western Front during WW1. It is the first Indian national memorial in France and is located near the battlefield where Lance Dafadar Gobind Singh won the Victoria Cross for his death defying deeds of valour on 1st December 1917. The project was conceptualised and its construction was supervised by the USI.



Inauguration of Indian Great War Military Memorial in France on 10 Nov 2018

(L–R) Ambassador of India to France, Mr Vinay Kwatra, Smt Naidu & Shri M Venkaiah Naidu, Vice President of India, Mayor of Villers Guislain Mr Gérard Allart, Director of USI, Lt Gen P K Singh, PVSM, AVSM (Retd)

Editorial

The 34th National Security Lecture on “Security Strategies for India as an Emerging Regional Power with Global Aspirations” was delivered at the USI on 05 December 2018 by Shri Shivshankar Menon, IFS (Retd), former National Security Advisor to the Prime Minister of India. Edited version of the talk is the lead article in the Journal. The author has stated India’s Strategy as – “The Transformation of India”. At independence in 1947, the abject condition of India left the nation with no choice but to make the transformation of India into a strong, prosperous and modern country as the national goal. As professionals our task, therefore, is to protect and secure India’s integrity, citizens, values and assets, and enable development and opportunities where every Indian can achieve full potential. To do this adequate hard power is required to have a say in the international system to transform the lives of our people. A proactive strategy with a vision can help to shape the environment. For achieving credible deterrence capability, adequate budget support is required. However, India’s defence budget for current financial year is only 1.56 per cent of the GDP and is the lowest during the last five decades or so. Corrective measures are called for. India has improved her relative position vis-à-vis every other country except China. And yet, today India is more dependent on the outside world than before. We rely on the world for energy, technology, essential goods like fertilizer and coal, access to markets, and capital. Consequently, we cannot think of securing India without considering energy security, food security and other issues, that can derail our quest to transform India. We need to shape the external environment along with our partners. We need to address issues like the contested global commons in outer and cyber space, and the high seas, claims on our territory, nuclear proliferation, state sponsored cross border terrorism, and so on. Fundamental reforms of our internal security apparatus and military reforms are overdue for ensuring enhanced capability of security forces in keeping with our core values and national interests. China – US contention and trade war is likely to continue for sometime with a paradigm shift away from co-operation. This opens up opportunities and space for other powers. Both China and the US will look to put other conflicts on the back

burner, while they deal with their primary concerns. While China is busy with trade war, India should exploit strategic window to build up credible deterrence capability or else we will become vulnerable to strategic coercion.

Article titled “Impressions of Visit to Chengdu and Tibet Regions of China” authored by Maj Gen BK Sharma, AVSM, SM and Bar (Retd) makes interesting reading. The author visited these Regions in September 2018 on invitation from South Asia Centre, Sichuan University of China. The author is of the opinion that China believes; the US sanctions notwithstanding, it would remain the centre of gravity of the global supply chain. The sanctions are bound to hit American consumers and give jitters to the World economy. China intends to mitigate reductions in exports by enhancing domestic consumption. Suburbs of Chengdu have a number of model villages, farmhouses, restaurants and recreational facilities. Tibet figures prominently in China’s strategic calculus, it being the water tower of Asia, rich in resources and shares borders with India, Nepal and Bhutan. China has adopted two pronged strategy to assimilate Tibet. Firstly, massive development of the region. Secondly, social re-engineering of the Tibetan population. About 20 per cent Hans have settled in Tibet. Schooling till 12th standard is compulsory. Mandarin is compulsory from first class level and is a criteria for getting government jobs. Majority of youth in Lhasa speak Mandarin and lure for Tibetan language is fading. Tibetan Buddhists feel major spiritual deficit and a loss of inheritance. Massive multi-modal connectivity has been developed in Tibet. Gongga near Lhasa is a modern airport. The airport has multiple run-ways and a portion of the airfield is used for military aircraft. Nagqu is the mother logistic base in Tibet. Lhasa city wears a modern look with wide roads, public squares and multi-storey flats. While Chinese respect India’s resolve to maintain strategic autonomy, the skepticism about growing strategic proximity between India and the US persists. China perceives that in the near future; India and the US are bound to emerge as strategic allies which would be inimical to China’s interests. China, therefore, seeks to improve relations with India lest it out-rightly falls in the US orbit. The Sino-Indian relations probably will continue to be characterised by – cooperation, competition and conflict, Realpolitik on the part of China demands a tactical adjustment to steer relations

with India to a manageable level, so that the American challenge is mitigated. India, on her part should make efforts to achieve credible deterrence and show deft diplomacy in engaging China.

Article titled “US-China Heated Cold War finds Taiwan as a Sensitive Spot” authored by Maj Gen SB Asthana, SM, VSM (Retd) focuses on Taiwan as a raw nerve of China. US - China contention and trade war is on. It is likely to continue for some time with paradigm shift away from co-operation. USA by signing of Taiwan Travel Act, sale of modern military equipment to Taiwan and sending two warships to Taiwan Straits indicates that the USA and its allies will insist on freedom of navigation, and not accept unilateral interpretation of South China Sea as China's lake. China should be ready for escalation, having created features into artificial islands in South China Sea and then creating military infrastructure and arming artificial islands and claiming sovereignty on 'water' which the world perceives as global common. As far as people of Taiwan are concerned, increasing numbers have started identifying themselves as 'Taiwanese' and feeling of 'nationalism' is on the rise. They want to enjoy freedom, democracy and prosperity. China claims Taiwan as its integral part. Its independence will affect Chinese reputation. Reunification of Taiwan continues to be China's dream. Taiwan is crucial for strategic dominance of South and East China Sea and Asia Pacific Region. The US has major trade interests in Taiwan besides strategic dominance. US prefers to have democratic, independently governed Taiwan as an ally, where they have strategic and economic leverages, rather than forming part of Communist China. US is looking at sale of advanced military weapons to Taiwan, which is also seeking to buy such weapons to boost their defences. These are new measures to put China under pressure for its adventurism in South China Sea. The emerging scenario in Taiwan affects India. Taiwan is looking at developing alternate trade partners with Asian democracies like India rather than excessive reliance on the PRC. Taiwan is looking for cheap labour, raw materials, skilled english speaking man power and good infrastructure, which is available in India along with a big market. For India; Taiwan can be a potential source of FDI. Taiwan wants to build its own military capability to withstand coercion from China.

The subject for USI Gold Medal Essay Competition 2018 Group 'A' was "The Belt and Road Initiative (BRI) of China: Security Implications for India and the Indo Pacific Region and Response Strategies". Captain T Sugreev, IN, got the first prize and has been awarded the Gold Medal. Edited text of the Essay has been published as an article in this issue of the Journal. The article is very well written. BRI proposes to connect 65 countries, representing 55 per cent of world's Gross National Product (GDP), 70 per cent population and 75 per cent of energy resources. According to Beijing, substantial diplomatic, financial and intellectual resources being poured into the Project, make it the most defining economic and political construct of the 21st Century. The Vision Document on the subject describes BRI narrative as win-win cooperation, inter-governmental coordination, connectivity of infrastructure, opening bottlenecks, unimpeded trade, and integration. However, analysis of the Project reveals that it involves certain risks. The Belt passes through one of the harshest terrains in the world and cost of investment to be made by stake holding countries is high. There is political instability in some regions and territorial and maritime disputes of China with its neighbours, make the BRI inherently a risky preposition. Also countries signing up for BRI may end up in massive debt traps. The Chinese economy may not be able to sustain its growth in view of tariff war unleashed by the USA. As per the Asia Development Bank (ADB) report, Asia will require US \$ 26 trillion from 2016 to 2030 i.e US \$ 1.7 trillion investment per year to maintain balanced growth. On the flip side, in case BRI is successfully completed, Chinese penetration in these countries will increase and latter's dependence on China will increase substantially. As far as India's response, the author has suggested that India should emulate Deng Xiaoping's stratagem – "hide your brightness, bide your time, build capabilities". We should try to bridge the gap vis-a-vis China in all dimensions of national power.

The subject of USI Gold Medal Essay Competition 2018 Group 'B' was "India – A Net Provider of Security in Indian Ocean Region (IOR) – A Roadmap". Major SK Misra of 25 Madras got the first prize and has been awarded the Gold Medal. Edited text of the Essay has been published as an article in this issue of the USI

Journal. IOR is bounded by landmass on three sides. It comprises 38 littoral states and the Indian ocean, which is third largest ocean in the world. The Indian subcontinent, Africa, the Arabian and Malay Peninsulas, Indonesia and Australia bound the IOR. India dominates the Region because of its strategic location. Indian island territories of Andaman and Nicobar and Laxadweep, further accentuate its access. India's coastline is 7500 kilometres or so. 90 per cent of India's trade by volume and 90 per cent of energy supplies come from seaborne traffic. India has been at the centre of the IOR historically; spreading commerce, culture, religion and ideas via the sea. However; a changing world order in the past two decades with rise of China and relative decline of the USA led global order has upset India's strategic space in the IOR. This trend needs to be reversed, before China becomes the foremost power in the Region. By 2025, India must become 'Net Provider of Security' in the Region by leveraging its geographical advantage, military engagement with littoral states, as well as world powers to reclaim its position of eminence and secure its maritime interests. Countering the influence of China and combatting piracy and non-traditional security threats, can help attain the goal. National Security Council (NSC) should prudently integrate efforts of the MoD, intelligence agencies, MEA and Ministry of Finance. Armed Forces have a role as security providers. The joint publication Indian Armed Forces 2017 and India's Maritime Security Strategy 2015 describe India's security interests as seeking constructive engagement and shaping conducive maritime environment. The Armed Forces lack expeditionary capability to operate and project power to become net security providers. Military reforms are required to make them a "Joint" force with synergy in all domains. Joint Commands are required on the West as well as East Coasts in addition to the Tri-Services Andaman and Nicobar Command. These Commands must be capable of executing maritime operations with the Army and Air Force operations in support of the Navy. Amphibious capability is essential for projecting power and establishing hold over distant littoral islands. The Navy and the Air Force already have certain sealift and airlift capabilities. However, synergy needs to be achieved and vital deficiencies need to be made up. Currently the world order is in a flux. Rebalancing of power between the US and her allies on the one

side and China, Russia and some other powers on the other side. The IOR is India's backyard and must remain so. Military engagement with littoral states and some other powers is essential. In securing own interests, India would also secure stability of the world order; which is crucial for India's growth and development.

The article titled "Tactical Nuclear Weapons : Myths or Realities" authored by Air Commodore Rippon Gupta is well written. A tactical nuclear weapon refers to a weapon which is designed to be used on a battlefield during military operations. It is designed for use in battle as part of an attack with conventional weapon forces. India and Pakistan are both nuclear powers. Both continue to develop their nuclear weapon capability. The main purpose of strategic nuclear weapon is deterrence. India's nuclear programme is firmly controlled by civilian leadership, who view nuclear bomb as a political instrument. Pakistan's nuclear programme is run by military officers, who think of use of the nuclear bomb in military terms and are filling in perceived shortfalls in nuclear capability to shore up deterrence against stronger neighbour. With India's growing conventional capability and pro-active military plans, Pakistan has been emphasizing the utility of tactical nuclear weapons. India's stand is that a nuke is a nuke and use of even a tactical nuclear weapon will receive a response leading to unacceptable damage. This is in keeping with India's declared nuclear doctrine. Pakistan has not announced its nuclear doctrine. The author has brought out limitations of tactical nuclear weapons in a comprehensive manner. In the context of serious geographical challenges, it has been spelt out that Lahore in Pakistan is only 25 km from border between the two countries and Islamabad less than 300 kms. Usage of nukes can cause damage to civilian populations, thus making the impact strategic. Tactical nuclear weapons are small and light. These can fall in the hands of terrorist groups leading to loss of central control by the Government. Author is of the view that India should not go in for tactical nuclear weapons because it has serious misgivings which are hard to ignore.

Article titled "UAVs – The Silent Force Multipliers in Future Air Defence Operations" has been authored by Lt Col Piyush Kumar Sanwal of Army Air Defence. The tussle for dominance in

the defence-offence equation has been going on ever since dawn of conflict among human beings. With advancements in Information and Communication Technology (ICT), there has been a paradigm shift in war fighting concepts. The author has taken pains to spell out various contingencies, in which Unmanned Aerial Vehicles (UAVs) can be employed in modern warfare. Contemporary roles, missions and capabilities have been explained in a logical manner. Harnessing of potential of UAVs in likely future operations has also been discussed. Their utility in reconnaissance, intelligence, surveillance and target acquisition (RISTA) missions has been highlighted. UAVs can be fruitfully employed for waging network centric warfare (NCW). Besides force multiplication in conduct of tactical operations, UAVs can help in promoting synergy in operations involving the three Services facilitating integrated employment of terrestrial, airborne and space based systems.

Current issue of the Journal has 12 articles in all. Of these, abstracts of five articles have been given at the beginning of each article. These have been authored by eminent authors and make very interesting reading.

Review of the following books has been published in this Journal :-

- (a) "Will Tibet Ever Find Her Soul Again? India Tibet Relations 1947-1962".
Reviewed by Lt Gen BS Nagal, PVSM, AVSM, SM (Retd).
- (b) "Jamal Mian : The Life of Maulana Jamaluddin Abdul Wahab of Farangi Mahall, 1919-2012".
Reviewed by Maj Gen Ashok Joshi, VSM (Retd).
- (c) "China in the Indian Ocean : One Ocean, Many Strategies".
Reviewed by Commander S Sarangi.
- (d) "Pakistan's Tactical Nuclear Weapons: Giving The Devil More Than His Due?".
Reviewed by Maj Gen Ashok Joshi, VSM (Retd).

Major General Y K Gera (Retd)

Security Strategies for India as an Emerging Regional Power with Global Ambitions

Shri Shivshankar Menon, IFS (Retd)*

National Goal

Any strategy must have a purpose or a goal, the clearer it is the better it is. India's Strategy is clear and will remain so for quite some time—it is the transformation of India. At independence, there could be no doubt about what the national goal or aim should be. The abject condition of India in 1947 left us with no choice but to make the transformation of India into a strong, prosperous and modern country the overriding national goal. In 1947, after partition displaced about 10 million people, life expectancy was 26 years, literacy 14 per cent (8 per cent among women), and disease, hunger and poverty were rampant. India had seen less than 1 per cent economic growth since 1900 to the extent that we were unable to feed ourselves. The Bengal famine of 1943 and 200 years of Empire Raj had reduced one of the most prosperous and advanced societies in the world to one of the most miserable and backward. Because of this, at Independence the goal of transforming India naturally took priority over all other possible goals. Goals of status, recovering lost territories, organising our neighbourhood, and so on were only means to an end, and were to be pursued only insofar as they helped us to transform India. There have always been differences among us on how to get there. But the goal of transforming India has been agreed across the political spectrum and is what all governments since independence have worked for.

As National Security Professionals our task is to protect and secure India's integrity, citizens, values and assets, and to enable the development and transformation of India into a strong, prosperous and a modern nation where every Indian can achieve his or her full potential. To do this task, India must accumulate hard power if it has to have a say in the international system. We accumulate hard power not because we seek domination or

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hegemony or because it makes us feel good. We do so only so that we can transform the lives of our people. That is the sole purpose of the acquisition of hard power. India is unique in several respects, and no other power shares our interests. In fact, the established power holders in the international system resent the rise of new powers and resist it, covertly and overtly. If we seek a say in the running of the international system, and a larger international role, it is for the purpose of transforming India. Some in India think that this is too defensive a goal, that we should make it clear that we wish to be a great power or a super power. However, being a great power will follow, not precede, our success in building a strong, prosperous and modern India. The USSR which attempted otherwise saw its defence spending consuming its economy, leading to its disintegration.

All rising powers in history have chosen to keep their head down while building their own strength, rather than inviting resistance to their rise to great power status by proclaiming their power. Those that followed the path of flaunting their ambition and their growing power too early, like Wilhelmine Germany and Imperial Japan, were frustrated in their rise and paid a heavy price. Sparta prevailed militarily over Athens at the cost of her own destruction, leaving Persia the real winner of the Peloponnesian war. The Soviet Union, Japan, Germany and Pakistan are all 20th century examples of what happens to powers that overreach and proclaim grandiose ambitions. China so far had bided its time. Let us see whether China's rising assertiveness will be 21st century example of this phenomenon.

Please note that this task does not limit our security calculus to the territory of India. Also, that it excludes ideas such as exporting democracy, protecting the ideological frontiers of India, creating global public goods, seeking status, seeking revenge, undoing Partition, and other such pursuits, unless they contribute to the security of India's citizens and assets and to India's development and transformation.

Our goal is sufficient security, not absolute security. And the reason why it should be so is because absolute security for any one state in the system would mean absolute insecurity for all the other states. By this criteria, with a few exceptions, we have actually managed to provide India with sufficient security to enable

her to change and grow faster after independence than ever before in her long history.

Strategy

A strategy is a plan of action designed to achieve one's long-term or overall aims. In other words, it provides for the achievement of one's goals using the means available within the given situation. It is thus largely a means and ends problem. Setting the goal is a political function that a state, society or nation undertakes through political and social mechanisms.

What strategy you adopt depends not just on the goal or where you want to reach but, on the means, available and the situation that you are in. A reactive strategy is one where you list threats and respond only when they become acute or hit you; this is the strategy of the small and the weak and of those without capacity and vision. Alternatively, a proactive strategy, with a vision and some power, helps to shape the environment. This is a state that we have achieved after 70 years of independence. We can consider this as a much more reactive strategy that we have achieved. In having a reactive strategy no matter how powerful you are, you need to set up a hierarchy of tasks which enable you to measure the tasks against your goal of the transformation of India.

Our Inheritance

The Raj always gave priority to imperial interests over India's and based its defence of India on defence in depth. This was based upon what Mortimer Durand, then Foreign Secretary wrote in 1875, that Curzon later adopted, and the former governor of the NWFP and last Foreign Secretary of British India, Olaf Caroe, called—the glacis or Himalayan fringe. These three sought to build a ring of buffer states or neutral zones running from the Persian Gulf through Iran, Afghanistan, Tibet, and Burma, which was later replaced by Siam. In this effort they met with mixed success at different times in Afghanistan and Iran. Britain fought wars to ensure that the states and statelets in this zone were neutral and not available to Britain's rivals through the Great Game and, as a last resort, war. Within the outer ring of buffers, was another zone where British influence predominated and no other power was allowed to enter,

but British Indian law and administration did not apply. In this zone, the presence of Indian forces was avoided, as far as possible, until Curzon pushed them forward in the West. In the West, Indian law and administration applied up to the Indus, from the Indus to the Durand Line tribal law applied except within 500 yards of the main highways and the tribal chiefs kept the peace in return for British subsidies. A similar distinction was maintained between boundaries in the East which were, however, left much more fluid since there was no threat from a decrepit China in British eyes comparable to that from the Russian empire.

At independence, India faced a new strategic situation that, our inheritance from the Raj did not prepare us well for. Externally it was not an easy situation. In 1947 India lost the security provided by the Royal Navy and Empire. We could not be followers of Curzon, Durand and Caroe in pursuing grand strategy without the resources or interests of the British Empire. We had been partitioned, saddled with refugees, had a hostile neighbour to our West with whom we were forced to fight from day one and had a number of large princely States to be integrated within the subcontinent. China occupied Tibet in 1950 and we had a border with them for the first time. Before that we had a boundary settled by custom, usage and treaty with Tibet. We lost all the buffers that the British Indian Empire had: Afghanistan, Tibet, Myanmar, this made the earlier British strategy impossible for the new government to follow. Lastly, we could no longer rely on the Royal Navy for our maritime security. For almost two centuries the British Indian government had left the sea to London, while Calcutta and Delhi worried about the land borders. The result was a severe case of sea-blindness in the new Indian republic and its leaders, which we have only recently started to overcome. Logically, once our land frontiers were closed with two difficult neighbours like Pakistan and China, it was the sea, the much cheaper domain for transport but which is much more expensive militarily, that we should have turned to.

Independent India

Independent India fought four major wars in first twenty-three years of our existence. This shaped its national strategy. There are, of course, basic drivers of national strategy such as geography and history and economic endowment, that remain true no matter how

your capabilities or the situation around you change. But the effect they have on policy varies over time.

On the other hand geography, history and economic endowment have made us a trading and manufacturing nation. We have been most prosperous and successful when most connected to the world because we are people-rich even if resource poor. Today, 80 per cent of our imports are essential maintenance imports of energy, crude oil, fertiliser, non-ferrous metals and even lentils like *moong dal*. In history we have been an exporter of ideas and people, and have been a net provider of knowledge and security—in the Indian Ocean area and across land borders to our West.

There are changes in how we see our interests as a result of technology and changed situations, the best example are the Himalayas. For most of history we had no border with China, only with Tibet, and regarded the Himalayas as an impenetrable defensive barrier protecting us. Today, with the Chinese in Tibet and with modern technology, the Himalayas are not an impenetrable barrier or defensive wall, and it is essential that we have visibility across the mountains to know what is happening in Tibet. Our definition of our interest, in this case, has evolved considerably. Equally, we often speak, as Curzon used to, of India's interests from Suez to Malacca. But today, our major trading partners are all outside this region, which accounts for less than 15 per cent of our non-oil trade. Our area of primary economic interest is, therefore, much wider than our geopolitical reach. Our well-being is affected much more by global factors than is reflected in our political-military thinking. In other words, though geography is unalterable, and history is a man-made construct, neither can be taken for granted as always having the same effect on our calculation of national interest or on the strategy that we should follow.

National Security Tasks

Since free India couldn't follow the strategy of the Raj, what should determine our strategy? As stated in the beginning, our goal is the transformation of India; it is according to that task that we should prioritise and concentrate on issues and problems — on the basis of how they will affect our ability to transform India into a modern, prosperous and secure country where every citizen has the

opportunity to achieve his or her full potential. The overriding goal of transforming India enables us to prioritise among our many opportunities and challenges according to their effect on India's integrity and their ability to affect the transformation of India.

The Hierarchy of Security Tasks. The hierarchy of security tasks that results from this calculus of seeing what matters in terms of our transformation in order of importance are:

The Integrity of India

This is primarily physical integrity and territorial integrity, but it is also in terms of defending India's other attributes and values and its sovereignty. This is a primary and permanent interest.

Internal Security

This is critical to the wellbeing of our people and, therefore ranks above everything else and next only to the integrity of the nation. It is also critical to our ability to deal with our external security. Unlike the fifties and sixties, we face no external existential threat as a nation. Deterrence, nuclear and conventional, has by and large operated since the seventies, and when it failed — as in 1999 in Kargil — it has rapidly been restored. The last large-scale conventional war we fought was forty-six years ago in 1971. The risk of war is not what it was. The balance of power in our immediate neighbourhood is better than it was. Nor is there a serious separatist threat within India that we cannot prevail upon.

If there is an existential threat to India it is from within. It is our internal polarisation and divisions — LWE, communal violence and polarization. These are our own nation building failures. There is social violence as a consequence of extremely rapid and unequal development and rootlessness following rapid urbanisation, which could threaten the existence of India as we know it, and which today contributes to the average citizen's heightened sense of insecurity. Deaths from terrorism and separatist violence have declined steadily for a decade and a half, but since 2012 deaths from communal violence have risen. The crime statistics for social violence and crimes against the person such as rape, are also worrying and increasing. Our real threats are internal—polarisation and alienation.

The problem of social violence and fracturing, alienation etc as a result of urbanisation is not peculiar to us in India though it is most rapid and dislocating in India and China. This is a global issue. Of the 560,000 violent deaths around the world in 2016, 68 per cent were murders, wars caused just 18 per cent deaths. Today 70 per cent of humanity lives within 200 miles of the coast, and of the 43 megacities (over 10 million population) only 3 are outside what used to be called the Third World. By 2025, 75 per cent of the world's population will live in cities. In India by then more than half our population will live in cities. Socially, we will be an aspirational and young population, cut off from traditional family and social structures, alienated and alone, ready for new ideologies, good or bad. The political effects of urbanisation are even more marked. Politics becomes an exercise in mob psychology and mobilisation, abetted by the mass and social media which converts politics into politics of emotion. This is an environment where social violence, polarisation and the militarisation of policing are likely, and where traditional policing is ineffective. Today we see social violence on the rise across the globe, enabled by the new technologies and the easy availability of traditional weapons. The state has lost its monopoly of violence.

In India, since the beginning of this century, all indices of violence have actually declined except—and this is important, communal violence and social violence or crimes against the person, which have increased since 2012. This is already visible, and not just in India. However, for us the scale of the problem is more complicated.

External Challenges— China and Pakistan

China's rise is the foremost challenge which could derail our quest for transforming the lives of Indians. But it is also an opportunity, as is the return of classical geopolitics and the post-2008 fragmentation of the globalised world economy after the end of the world's unipolar moment. It is in our interest to create, to the extent possible, an external environment that enables the transformation of India. Pakistan is a strategic distraction and we will talk about it later.

Transnational Threats

This has become important, particularly in the public mind, as Pakistan has sought to compensate for her internal decline by

attacking India and making herself useful to outside patrons — a nuclear bomb for Saudi Arabia; checking India and providing access to the Indian Ocean and influence in Afghanistan for China; a strategic toehold and the tactical promise of a clean exit from Afghanistan to the US, and so on. But the fact is that Pakistan and the cross-border terrorism she sponsors could derail our quest only if we allow them to. That is why I say that Pakistan is only a strategic distraction. Sadly, though India's responses to terrorism have improved, terrorism itself has enjoyed a global resurgence — in West Asia, Pakistan and Afghanistan and North Africa. In Afghanistan, Pakistan has got the US, Russia and China to buy into the idea that the Taliban should be accommodated in the government, and that Pakistan can deliver that outcome. And we now see terrorism spreading in South-East Asia as well, from among the Rohingya in Myanmar through Malaysia and Indonesia to the Philippines. The dangers of contagion and radicalisation in India are increasing, though its effect will depend on what we do internally.

The threats mentioned earlier are those that we can manage but the real transnational threats now come not so much from terrorism but from the militarisation of outer space, from the hostile use of cyber space, and from renewed proliferation risks.

Enablers and Necessities

These are things without which we cannot transform India. These are challenges which would affect our quest unless handled properly. They include energy security and building the technological and industrial sinews necessary for India to be strong and prosperous. They also include non-ferrous metals, access to markets and the other things we depend on the world for, because of our resource endowment.

Over half of our GDP is due to the external sector, from the import and export of goods and services. In 1991 when we began radical reform and opened up to the world, external merchandise trade (import and export of goods) was about 15.3 per cent of India's GDP and most of it went West. By 2014 it was 49.3 per cent of GDP and most of it flowed East of India. When you add Services, more than half our GDP depends on our dealings with the rest of the world. This has changed and expanded the definition of India's interests. Clearly, freedom of navigation in the South China Sea became an Indian interest of some importance once

our trade began increasingly flowing East through those waters. During the same period, China, for strategic and commercial reasons, in 1996 informed the UN that the nine-dash-line was her boundary in the South China Sea and after 2008 began describing it as a “core interest”. In other words, as both our countries grew, our interests evolved, and we began to rub up against each other in the periphery that we share. The larger point is that as we have developed, our interests have grown, we are more dependent on the rest of the world than ever before, and, therefore, our definition of our own security has grown. This requires an adjustment in our thinking, and in our strategy.

The New Geopolitical Scenario

We are today in a new geopolitical situation, caused primarily by the rise of China, India and other powers—Indonesia, South Korea, Iran, Vietnam—in a crowded Asia-Pacific which is the new economic and political centre of gravity of the world. Rapid shifts in the balance of power in the region have led to the arms race that we see around us, and to rising uncertainty, now also fuelled by the unpredictability, disengagement and transactional “America first-ism” of Trump. China-US strategic contention is growing, uninhibited so far by their economic co-dependence. The shift in the balance of power is clearest in global GDP shares.

Share of Global GDP (PPP)

	1980	2016
Advanced countries	64 per cent	42 per cent
Europe	30 per cent	16.7 per cent
China	2.3 per cent	17.8 per cent
India	3 per cent	7.24 per cent

By 2014 India and China together accounted for about half of Asia’s total GDP. In PPP GDP terms they are the world’s largest and third largest economies. Most of this, of course, is accounted for by China. China and India’s combined share of world GDP in 2016, of 17.67 per cent (in nominal terms) or even 25.86 per cent (in PPP terms) is still well below their share of world population of 37.5 per cent, but represents a significant economic force. How the overall location of economic activity has shifted is apparent in

the fact that of the world's total nominal GDP of \$ 74.1 trillion, Asia accounts for 33.84 per cent, North America for 27.95 per cent and Europe for 21.37 per cent². America's share has remained roughly constant since the seventies, and it is Europe's that has dropped sharply, in favour of Asia. In essence, as a result of globalisation, the balance of power has shifted. The world is multipolar economically, still unipolar in military terms, but confused politically.

Transformation in International System and Impact on Indian Security

We are living in a time when there is a deep sense of strategic confusion, not just in India but in some of the most powerful states in the world. In our case, that confusion extends not just to the ultimate goal the national security apparatus should pursue, but also to the best means to achieve them. We seem to mistake controlling the narrative with creating outcomes, which is the real task of foreign and security policy.

Looking at the world as a whole from the end of the Cold War in 1989 for some years until 2010; war seemed to be going away. Interstate warfare disappeared for a while and civil wars were at a lower level. Since 2010 war is back, and armed conflict is increasing steadily in the world as a whole. The number of wars, the number of battle deaths, the number of terrorist incidents, and the number of people displaced by violence, are all getting worse. In 2014, for the first time since the end of the Cold War, global annual battle deaths topped 100,000, a level below which it seldom fell during the Cold War, with spikes above 200,000 for extended periods. In the same year, 2014, the worldwide total of refugees and internally displaced persons topped 50 million, a number not seen since the close of WWII and the Chinese civil war in the forties. In 2015 it touched 65 million people! In the same period, terrorism has reached unprecedented levels in the Middle East, Africa and the West. The global number of terrorist attacks, and the number of casualties almost tripled between 2010 and early 2016.

We are now in a far more dangerous world, where the Westphalian state has collapsed or vanished to our immediate West, but where traditional great power rivalry between strong and rising states is the norm to our East. This is evident in the return of Asia-Pacific to centre stage in global politics and economics,

the international system's limited ability to accommodate change (when established powers like the US, Europe and Russia are losing self-confidence), and the return of classical geopolitics in terms of territorial and maritime disputes, political instability, and contention in the maritime domain in the South China Sea and the East China Sea. China is successfully building a continental order, consolidating the Eurasian landmass with Russia's help, through pipelines, roads, railways, fibre optic cables and so on, using her One-Belt-One-Road/BRI project as a strategic Marshal Plan across the continent. She is also contending for supremacy in her near seas with the existing maritime order led by the US and has succeeded to the extent of converting the South China sea into the South China lake.

China is reforming the PLA into an instrument of force projection, an expeditionary force modelled on the US armed forces. She has also modernised her nuclear and ICBM forces into a more capable second-strike force and developed MRBM and cruise missile capabilities and systems that are altering the regional military balance, even with the USA. The latest round of PLA reforms, of the military commands and regions, of the role of the Political Commissars, and the functional and other military changes show a determination to change the PLA in fundamental ways into an instrument for power projection and to fight short, intense, high-technology wars in "informationalised" conditions, outside China's own territory and immediate periphery, further developing PLA missile, maritime and air capability. The five new theatre commands are modelled on the US pattern and bring an unprecedented degree of jointness into the PLA. As China seeks primacy in a world so far dominated by the US, we are in the midst of a destabilising power transition which may or may not be completed. The immediate prospect, therefore, is for a low-growth world which is more riven by inter-state and intra-state conflict and violence. In other words, we are in an increasingly dangerous world, which is fragmenting and slowing down economically, while India's adversaries — state or non-state, or both, as in Pakistan's case— are becoming increasingly powerful.

Internal Security Concerns

If the external world is getting more unpredictable and uncertain, the internal security challenge is also evolving. The increase in communal violence and polarisation, and its concentration in certain

North Indian states, is worrying. The other rising form of violence is social violence, mostly against the person, in the form of rapes, violent crime and other side effects of rapid urbanisation, the breakdown of the sense of community and family, and the rootlessness of the displaced and marginalised, whether for economic reasons like work, or as a consequence of other phenomena. It is this marginalisation, to some extent the consequence of development, that feeds the Naxalites with their foot soldiers and makes LWE such a difficult phenomenon to eradicate. This is something that traditional policing and the Indian state is not equipped to handle, mitigate or solve.

It is a cause of worry that while the world around India has changed in fundamental ways, we are still doing what was good for us some years ago, and may be frittering our energies away on status and prestige goals rather than our hard interests. In other words, that we have not adjusted our policies to the new realities.

India's Suggested Response

What should India's response be to the new emerging situation?

Strategic Autonomy. Fear of the future which portends an unstoppable China, leads some to suggest alliance with the USA. In my view the best response is the pursuit of strategic autonomy. This has been the common thread running through the foreign and security policies of successive governments of India until the present one. In practice it has meant keeping decision-making power with ourselves, avoiding alliances, and building our capabilities while working with others when it was in India's interest to do so. Alliance seems to me to be exactly the wrong answer. We should retain the initiative with ourselves and not get entangled in other's quarrels, keep our powder dry and ourselves free to pursue India's national interest. This is a world that calls for creative diplomacy and flexibility, adjusting to the fast changing balance of power and correlation of forces around us. The sources of instability are in our immediate vicinity: in fragile and extremist-ridden West Asia, and in East Asia where a rising China is increasingly assertive in the pursuit of her expanding definition of her interests; in Pakistan and her internal demons. No alliance will solve these to our satisfaction. The US has her own and different stakes in China, Pakistan and West Asia.

Now is the time for us to stick to the verities that have enabled us to come so far, and to make progress in the last seventy years despite huge power asymmetries against us. Now is the time to build our own strength, enlarge strategic autonomy, and work with all those whom we can work within the international system. That appears to be the best way forward. Why do I think that strategic autonomy is the best way forward for us? Doklam is only the most recent example that shows that no one else is ready to deal with our greatest strategic challenge, China. We saw the tepid reaction of the rest of the world. To expect anything else is unreasonable. They do not share our interest in the integrity or the rise of India. No other country shares our precise set of interests for the simple reason that no other country shares our history, geography, size, culture and identity, and our domestic condition, all of which determine what we seek from the international system. What we seek is an external environment that supports the transformation of India, that enables us to build a modern, prosperous and secure country, eliminating poverty, illiteracy, disease and the other curses of underdevelopment from the lives of our people. That is our core interest.

Because that core interest is permanent, strategic autonomy has served our interest best despite changes in the international situation. During the Cold War, when the world was divided into two hostile camps, it obviously served our interest not to be dragged into external entanglements decided on by an ally or alliance. When the bipolar world ended with the collapse of the Soviet Union we entered two decades of globalisation, of an open international trading and investment climate. Once again it was in our interest to pursue a multi-directional foreign policy, working with all the major powers in the pursuit of India's transformation. The results of the pursuit of strategic autonomy speak for themselves: Over thirty years of 6 per cent GDP growth and a much more secure and capable India, which has pulled more of its citizenry out of poverty and grown faster than it ever did in history. Only one other country, China, can claim a better record in the recent past in terms of improving the quality of life of its people and in rapid economic growth. As a result of that period of accelerated growth and change, India is today much more integrated into the world than when she began. By every metric of power, in the last thirty years India has improved her position vis

a vis every country in the world except China. Strategic autonomy has served us well in much more difficult circumstances soon after independence when we lacked many of the capabilities that we now take for granted.

Building and Strengthening National Capabilities. It is essential that we presently concentrate our effort on strengthening ourselves, consolidating our periphery and on external balancing. Building our own capacity in every aspect of hard and soft power is essential. We have made some strides in building national power and in internal consolidation in the last seventy years. It is China that is our main strategic challenge, because she sees our rise as affecting her quest for primacy, first in the region, then in the world. If we are to meet this challenge, it is essential that we build our capacity in more than conventional defence. Wars are not won by equipment alone but by men and ideas too. We need an all-azimuth definition of security to guide our effort. This means military reform and changes in defence industry and higher defence management. This includes keeping up with the relevant technologies, as we did with nuclear weapons despite the pressures, we were subject to. For the future it includes scientific advances in communications, surveillance and other areas, like the use of photons. We need to prepare for the coming economic revolution caused by digital manufacturing, artificial intelligence and other developments.

Domestic Cohesion. We have gained experience in tackling and handling terrorism and separatism. Deaths by these two causes have been declining in India for a decade and a half. But deaths from communal violence are rising since 2012, as are social violence and crimes against the person. The more divided we are, the worse the condition of our people, the less able we are to cope with our internal and external security tasks. We need to reform our internal security structures and management methods, starting with police reforms.

Periphery Consolidation. If we are to enjoy peace at home to develop, we need to consolidate our periphery and ensure that it cannot be used against us. This is not the first time that we see outside powers in the Indian subcontinent. Today every major power except China defers to your preferences in the Indian subcontinent, and your means to cope with the situation have grown exponentially. We should learn to use them.

India – Pakistan Relations. Pakistan is not a strategic threat to India unless we hand them victory by making it possible for Pakistan to exploit religious fissures in our society. India has done best in the years when Pakistan was most active making trouble in Punjab, J&K and elsewhere. Our Pakistan problem now is in large part a China problem, because it is China that enhances Pakistan's capabilities, keeping her one step behind us at each stage of her nuclear progress, building up her defences and committing to her long-term future in the CPEC.

India – China Relations. India should engage China bilaterally to see whether we can evolve a new *modus vivendi*, to replace the one that was formalised in the 1988 Rajiv Gandhi visit which successfully kept the peace and gave the relationship a strategic framework for almost thirty years. In essence that provided for: negotiations on the boundary question while preserving the status quo on the boundary; not allowing bilateral differences like the boundary to prevent bilateral functional cooperation; and, cooperating where possible in the international arena. In practice each stayed out of the other's way internationally while concentrating on internal development and growth. That framework is no longer working and the signs of stress in the relationship are everywhere from our NSG membership application, to Masood Azhar's listing by the UN, to Doklam. The more we rise, the more we must expect Chinese opposition and we will have to also work with other powers, and in the subcontinent to ensure that our interests are protected in the neighbourhood, the region and the world. The balance will keep shifting between cooperation and competition with China, both of which characterise that relationship. The important thing is the need to rapidly accumulate usable and effective power, even while the macro balance will take time to stabilise. As stated earlier a large part of our trade flow is also going through the South China Sea. This makes freedom of navigation in the South China Sea a significant interest for India. As a consequence, India's stakes in the peace and stability of the area have grown. India, therefore, works with partners in the region like Singapore, Japan, Vietnam and others in new ways extending to defence and security issues. Like maritime security even issues like cyber security have emerged. These impact on India-China relations and need to be taken into account.

Besides, the international context in which the relationship developed has also changed. Before the 2008 crisis, the main economic issues on the multilateral negotiating agenda were North-South issues in the Doha Round, and international trade and investment flows were supportive of India and China's development. It was relatively easy and natural for India and China to work together on those North-South issues, to work up a common front. The same was true of climate change negotiations where India and China worked with the BASIC group to preserve the advances of the 1992 UNFCCC. After 2008, however, the world economy fragmented, with each major economy attempting to preserve its own growth and prevent contagion. With the post-2008 rise of protectionism, and China's rise to become a great manufacturing and trading power in the world, the issues were now of opening up domestic markets to each other in negotiations like RCEP, or trade facilitation, and were no longer developmental in nature. Energy security issues came to the fore in the climate change negotiations with far less flexibility displayed by the industrialised countries, and a middle-income and highly industrialised China's interests were now more aligned with those of the US and Europe.

In other words, both the global and regional context had become more challenging for India-China relations. Regionally, China-US strategic contention has intensified and presents other Asia-Pacific states with a choice between the two that they do not wish to make. The contested commons and security risks in the maritime, cyber and other domains further complicate the calculus.

As a result of successful domestic reform and development, the outside world is now a much greater factor and matters much more for both India and China, and will affect their future directly. They will, therefore, both seek to shape that external environment to a much greater degree than before. And since they both share the same periphery, they need to come to an understanding of how they will prevent their activism in their immediate periphery causing friction in their bilateral relationship.

To these changes in the balance of power and emergence of new factors that require a recalibration of India-China relations should be added the trajectory of domestic politics in both countries. The emergence of leaders who rely on a heightened sense of nationalism for their legitimacy, who present themselves as strong

leaders, represents both an opportunity and a danger. As strong and decisive leaders they could take the decisions required to deal with difficult issues in the relationship. At the same time a reliance on nationalism limits their ability to compromise and be flexible, or to counter the negative narrative that is emerging in both countries on the relationship.

The one factor above all others that has brought renewed stress into the India-China relationship is China's much stronger strategic commitment to Pakistan evident since President Xi Jinping's 2015 visit to Pakistan which announced the China-Pakistan Economic Corridor (CPEC).

This calculus of interests suggests that India-China relations are more complex than simple narratives suggest, and indeed that there is room here for both sides to seek a new strategic framework or *modus vivendi* for the relationship. This would require a high level strategic dialogue between the two sides about their core interests, red lines, differences and areas of convergence.

External Balancing. We must simultaneously work with other powers to ensure that our region stays multi-polar and that China behaves responsibly. Some of this began as part of the "Look East", now "Act East", policy begun by PM PV Narasimha Rao in 1992, and we are working more closely in defence, intelligence and security with Japan, Vietnam, Singapore, Indonesia, Australia and others.

There has been a lot of talk of the **Indo-Pacific** recently. Freedom of navigation and security in the Indo-Pacific is critical to India's wellbeing and future prosperity. But it is not the answer to our continental security issues, of which there are many, and which are not shared by any of the other members of the Quad. A free and open Indo-Pacific is a noble goal, but it will not be achieved so long as we do not recognise the different geographies, security issues and solutions in the Indian Ocean, the seas near China and the Western Pacific. The western Pacific is dominated by the US Navy. The seas near China are being converted into a Chinese lake, and are the only maritime theatre where China can hope for a favourable balance of power in the near term. The seas near China are enclosed seas, and have, therefore, been battle spaces in history, since powers can hope to control them and what flows through them. The Indian Ocean, on the other

hand, has an open geography, and has, therefore, always been a trading highway rather than a battle space. Even at its height, pax Britannica never managed to control all the choke points around the Indian Ocean. The security solutions and architecture for each of these bodies of water has, therefore, to be different and designed specifically taking into account the conditions of that sea.

National Security Structures

While the external security organs of the state have evolved considerably in the life of the republic, this is not equally true of the internal security organs. Our biggest security concern today is from within. India has shown an ability to learn and adapt to our external security threats. We have yet to show the same ability for our internal security threats, to modernise policing, for instance, to cope with the results of rapid urbanisation and social churn. This requires us to **reform our policing**, a road map for which the Supreme Court gave us in 1996 but which the states have not implemented.

No strategy can work without it being seen as an integrated whole, without a driving vision, clarity of goals and being matched to the means available and the situation. And that holistic view and the coordination of the various parts of the national effort is why we set up the National Security Council in 1998. NSC and NSCS now twenty years old. We have enough experience to give it a statutory basis and to formalise its working.

Are our structures effective?

Yes, they have been so far. We have built up nuclear deterrence faster than any other nuclear weapon state did; deterred large scale conventional war since 1971. Our national security structures and actions have provided sufficient security and kept the peace for India's best ever period of economic growth and social change in history, namely, the last thirty years.

Are we ready for future challenges?

We are better than before at handling conventional threats, including terrorism. But technology is changing the nature of the threats, as are the changes in India. The new technologies, like ICT, AI etc, empower both the state and small groups and individuals, irrespective of their motivation, good or bad. This has

far reaching consequences and we must stay abreast of the technologies and work out our own counter-measures.

Conclusion

Tactically, China-US contention — which I think is structural and, therefore, likely to continue for some time with a paradigm shift away from cooperation to increasing contention, despite temporary deals and “victories” declared by one or both. This opens up opportunities and space for other powers. Both China and the US will look to put other conflicts and tensions on the back burner while they deal with their primary concern, the other. We have seen this effect already in the Wuhan meeting and the apparent truce and reducing of rhetoric by both India and China, even though this does not extend to a new strategic framework or understanding or to a settlement of outstanding issues.

Strategically speaking, again, there is opportunity for India’s transformation. Despite dim prospects for the global economy as a whole, the UN forecasts that If China grows at 3 per cent, India at 4 per cent and the US at 1.5 per cent, by 2050 China’s per capita income would be 40 per cent of US levels, and India’s at 26 per cent, where China is now. China would be the world’s largest economy (in PPP terms), India the second, and the US the third. By that time both China and India will be overwhelmingly urban societies.

Of course, history, like life, is not a linear extrapolation from the past. But given the recent record of India growing at near 7 per cent for over 30 years and China at around 10 per cent for the same period, the lower estimates suggested by the UN appear a reasonable guess. Both India and China have much the same ratio of trade to GDP, show a hesitation in wholeheartedly embracing the private sector, display widening income inequality and distribution failures, and show limited state capacity, particularly in health and education. But rapid growth has given them the means and access to technologies to deal with these problems, if they can manage rising geopolitical risk and avoid costly entanglements abroad.

Seventy years after independence we are better placed and have capabilities that we never had before. And yet, if you were to ask the average Indian, they would tell you that they feel more

insecure than before or than previous generations. And that has a good reason. Our definition of security has grown to include several non-traditional aspects, most of which are now included in “human security”. Our expectations of the State and of the world are much higher than they ever were. And this is so at a time when the world itself is much more uncertain than it ever has been since WWII — politically, economically, and in terms of the pace of change in technology and life-styles.

The other reason why Indians do not feel as secure as we did is less well recognised and something of a paradox. As a result of seventy years of development, by most metrics of power India has improved her relative position vis a vis every other country except China. This is particularly true since reforms began in 1991. And yet, today India is more dependent on the outside world than ever before. We rely on the world for energy, technology, essential goods like fertiliser and coal, commodities, access to markets, and capital. Consequently, we cannot think of securing India without considering energy security, food security, and other issues that can derail our quest to transform India, such as climate change and cyber security. We also cannot think of securing India without trying to shape the external environment along with our partners. When you add the new security agenda and the contested global commons in outer and cyber space and the high seas, to our traditional state-centred security concerns such as claims on our territory, nuclear proliferation, state-sponsored cross-border terrorism, etc., you can see why there is greater worry or a sense of insecurity.

As for India, we risk missing the bus to becoming a developed country if we continue business and politics as usual, or try to imitate China’s experience in the last forty years, do not adapt, and do not manage our internal social and political churn better. We need fundamental reform of our internal security apparatus and military reform if we are to manage this singular world. Ultimately what should guide us as national security professionals is the quest to make India a great power with a difference, namely, in a way which enables us to achieve Gandhiji’s dream of ‘wiping the tear from the eye of every Indian’. That would be in keeping with our core values, national interest and is the right objective.

Avoiding war and attaining one’s goals is the highest form of strategy by any tradition or book — whether Kautilya, Sun Tzu or

Machiavelli. And if you look at India's record over sixty-eight years of independence, we have not done badly in moving towards our main goal of transforming India. That requires the national security calculus to consider broader questions — from technology issues, like atomic energy and cyber security, to resource issues like energy security, while building the strength to deal with traditional hard security issues. We have weathered several storms and performed our basic functions in the past. But it is certain that what will face us now will not be more of the same. Which brings me to the last and most important improvement that I think we need to make in our national security structures and their work — introducing flexibility into our thinking and our structures. For change is the only certainty in life.

Some Points made by the Speaker in the Q & A Session

- We may not have a written National Security Strategy, but our beliefs constitute our strategic culture. Based upon these our strategic behaviour has by and large been consistent regardless of who is in power in the Central Government.
- Our demography dividend can only be realised if we continue growing. We cannot grow if we cut ourselves off from the world.
- Education is critical to growth as also making sure that all sections of our society are beneficiaries.
- Pakistan will continue to make herself useful to her patrons - China and the USA which will help her to face us.
- What happens between China and the USA is a crucial variable which is important for our security situation.
- It is not that we cannot work with China. Since the 1980s China and India who are the world's largest and second largest importers of fertilizer have coordinated when they go to market to pick up their stocks, lest going in an uncoordinated manner creates a scarcity and drives up prices.
- 34 per cent of India's trade goes through the South China Sea, hence freedom of navigation in this sea is important for India.

- The US-China tariff war is also a consequence of realisation by the US that China is its peer competitor, and the window to prevent the rise of this peer competitor is closing. Since World War II, US core strategic interest has been to prevent the rise of a peer competitor. How far US big business which draws a very sizable part of its profits from trade with China, will go with sanctions remains to be seen.
- In case we are asked to choose to go with either USA or China, we should go with neither. We should maintain our strategic autonomy.
- We need to have hard power, and for that our defence budget needs to be more than what it is presently. At the moment our deterrence is showing signs of being frayed.
- In some way or the other everyone in India is a minority, that is why we are a democracy. Democracy gives inclusiveness and that is what gives us cohesion.
- Military reforms must be related to the current situation and not to the past.
- Almost 90 per cent of the Naresh Chandra Committee and Subramaniam committee reports were implemented. But these were the minor recommendations. The major recommendation, in particular for a CDS was not implemented. One reason for this is resistance from within the Services themselves.
- The National Security Advisor (NSA) is essentially an advisor, however; of our five NSAs some have maintained the view that unless you can implement what you advise, then you are of no use. All NSAs tried to do the job in their own image. The experience from USA has generally been that when NSAs (like Kissinger) tried to implement their advise directly themselves, the results were not good.
- Ideally senior serving military officers should be in the National Security Council (NSC), however; not only in the Armed Forces but also in the IAS there is a particular career progression route which gets upset when a rising officer goes off his core field. We must institute a system whereby the career interest of senior officers can be safeguarded in the NSC stream.
- We need specialist security professionals and not generalists.

Impressions of Visit to Chengdu and Tibet Regions of China

Major General BK Sharma, AVSM, SM and Bar (Retd)[®]

Introduction

I visited Chengdu and Tibet from 08 Sep to 14 Sep 2018, on the invitation from South Asia Centre, Sichuan University of China. The USI of India and the Sichuan University have signed MoU for undertaking joint research projects and exchange of scholars for seminars, Round Table Discussions (RTDs) and lectures. The two institutions have produced a book, “China’s One Belt one Road Initiative, Challenges and Prospects”. The joint project, “Building Strategic Trust between India and China” is underway. South Asia Centre is one of the nodal academic centres on India. The top management enjoys direct access to senior policy makers in the Chinese Communist Party (CCP).

During the recent visit, South Asia Centre had organized a brainstorming session on the geopolitical developments and their impact on Sino - Indian relations. The Chinese side was represented by Dr Sun Shihai, the Director of South Asia Centre and a galaxy of top level professors from the University. This was followed by a visit to the suburbs of Chengdu and Tibet. My impressions from the discussions and visit are summarised in the succeeding paragraphs.

Unraveling of China Dream

The Chinese are enthused with ‘China Dream’ that inter alia posits rejuvenation of China as a great power by 2049. Belt and Road Initiative (BRI) is de-facto China’s grand strategy, China Pakistan Economic Corridor (CPEC) its flagship project and Xi Jinping as the main architect. The US is perceived as a threat to the rise of China; and India and Japan as the principal players with proclivity to bind with Washington to balance China. China perceives US trade war as part of the US ploy to stymie its rise. So the primary focus for China for the moment is how to deal with an intransigent Trump Administration on priority. Much of Xi Jinping’s credibility is predicated on the prognosis of the BRI. There are concerns that

[®]**Major General BK Sharma, AVSM, SM and Bar (Retd)** is Deputy Director (Research) and Heads the Centre for Strategic Studies and Simulation (CS3), at the USI.

a pushback on the BRI will cause socio- economic stress in the country and impinge on the credibility of Xi Jinping as a core leader. Internally, one of the principal concerns of China is the radicalization of the Muslim population in the Xinjiang province and international condemnation it has attracted on the Human rights violations. Externally, their primary concern remains the future trajectory of Sino - US relations.

Internal Dynamics

There is considerable internal debate on Xi Jinping's decision to abolish the term limit, do away with Deng's 'Collective Leadership Model', effect of the US economic sanctions on China and social stresses, caused due to rapid urbanization. Barring some elite Netizens, majority believe that leadership continuity is an imperative to weed out corruption and marginalize groups resisting reforms. There is a belief that Xi Jinping will seek one more term and then hopefully handover power to a new leader. There is a view that nomination of a successor well in advance has its own flaws, such as, creation of coteries, cliques, parallel power centres and jostling for influence. There are concerns that sustained economic sanctions could bring down China's GDP, incrementally ranging from 0.3 per cent to 1.0 per cent. Such a reduction would entail loss of about 10 million jobs in the manufacturing sector and resultant displacement of workers mostly to urban centres. China believes that the US economic sanctions notwithstanding, it would remain the centre of gravity of the global supply chain. The sanctions are bound to hit American consumers and give jitters to the world economy. China intends to mitigate reduction in exports by enhancing domestic consumption. Presently, 60 per cent of Chinese population lives in urban areas. Rapid urbanization has caused socio – economic strain in the society. Most of the government schools in urban areas are over-crowded, with a teacher to student ratio reaching 1:80, and these schools are unable to accommodate more students, who are being diverted to poorly run and costly private schools. There is acute housing crisis for the young, who earn on an average US \$400 a month and support their parents and in most cases even grandparents. The bank mortgage on house loans is extremely high; per person, 25 per cent for one house, 50 per cent for two houses 75 per cent for three houses.

About 400 million people have transformed from agriculture sector to industry. Xi Jinping is focussing on developing industry in the relatively less developed western and central parts of China. There is a nation - wide campaign of mapping the poorest clusters in every province and allocating resources for their development. Relocation of people from far flung hamlets to new model cluster villages is underway. There is a drive for collection of more taxes from rich provinces and invest money in the less developed provinces. A new 'Rural-Urban Integration Model' forms the basis of development through rapid transport corridors and satellite townships. Villagers are being encouraged to create land banks and pool their resources to develop farmhouses and commercial enterprises to generate and share profits for improving living standards. Suburbs of Chengdu have a number of model villages, farmhouses, restaurants, recreational and conference facilities. The urban people visit these facilities to transact business, as well as experience village life.

The Communist party has 90 million members. CCP branches exist down to village level. Senior party members are mandated to identify potential party candidates based on their talent, skills and behaviour. The newly introduced 'Social Credit System' effectively monitors the ideological orientation and behaviour of people. After evaluating their performance, they are granted party membership. Nomination papers are scrutinized and endorsed by select committees, before participation in elections. There is a proper election system for entry into committees at the district, prefecture, province and central level. Chinese ensure that top leadership rises from grass-root levels, village, town, county, prefecture, provinces, under a very well defined appraisal system. Xi Jinping started his career as deputy of a county. The party and the administration work in tandem to jointly plan and execute development projects. Restructuring of CCP by Xi Jinping has rendered party factions such as the Youth Communist League, Princelings, Shanghai Gang (Jiang Zemin clique) more of a myth. There is a well-streamlined system of addressing grievances. The constitution permits people to hold protests albeit with prior permission from the police. The aggrieved people can address their complaints to the Administration and CCP committees up the chain. Inspection and Discipline committees are effectively dealing with the grievances and disciplining erring officials and party members.

Developments in Tibet

I visited Tibet from 10 Sep to 13 Sep 2018. During the Tibet tour, two scholars from the Sichuan University, who hold the membership of the CCP and a local Tibetan guide, conducted me. I visited Lhasa town, its suburbs and travelled along the Central Highway and Qinghai – Tibet Railway (QTR) to Namtso Lake. Chinese travel companies conduct select groups of foreign tourists after obtaining permit from the Foreign Office. Tibet figures prominently in China's strategic calculus; it being the water tower of Asia, being rich in resources and the fact that it shares vast borders with India, Nepal and Bhutan. China can use water and disputed border as a strategic leverage vis a vis India. China has adopted two-prong strategy to assimilate Tibet, i.e. firstly, the massive development of the region and the second, social re-engineering of the Tibetan population. China has developed massive multi-modal connectivity in Tibet. Gongga (65 km from Lhasa), is a modern airport astride Tsangpo River; with frequent flights to different parts of China. There is a regular international flight from Lhasa to Kathmandu. China is funding the construction of Nepal consulate in the Norbulinka complex, where reportedly the old Indian mission was housed before the annexation of Tibet by China. The airport has multiple runways and a portion of the airfield is used for military aircraft. The Central Highway connects the airport with Lhasa town across a 2.5 km long bridge system and a 2.5 km long tunnel system over the Tsangpo River. There are about seven passenger trains from Golmund (Qinghai province) to Lhasa (13 hours journey) and about three from Lhasa to Shigatse (less than three hours travel time), besides several goods trains. People from seven cities in China can travel by train to Lhasa. These trains are painted in disruptive olive green colour, probably keeping their military usage in mind. I travelled on the Class 70 Central Highway 65 Km short of Nagqu (the mother logistic base in Tibet) and further North to the Namtso Lake, which is located in super – high altitude area (above 16,000 feet) of north Tibet. It is the world's highest salt lake (70 km x 30 Km) connected from the Central Highway across 5190 metres high Lagingla pass. The Central Highway is being developed into an Expressway. There are a large number of resting and fuel stations on the way. Stringent accident prevention and rescue facilities are in place at regular intervals. Tourist companies have installed cameras in cabs and

drivers are periodically advised to watch speed limits and halt for rests. The mountains in the northern Tibet are ideally suited for conducting third stage acclimatization of troops and for operation-oriented training for contingencies in the super high altitude region. The road can easily carry two-way heavy and long containers/prime movers. Wi-Fi and mobile connectivity exists in every nook and corner of Tibet.

Lhasa city wears a modern look with wide roads, public squares, parks, multi-storey flats and swanky office buildings. Buddhist temples and monasteries are very well kept. The new Lhasa city looks like a classic Paris Street with pubs, discotheque and departmental stores, selling international brands. The town is well laid out with trilingual signposts in Tibetan, Mandarin and English languages. People in Tibet have access to good quality of life, medical facilities and job opportunities. The life span has increased from 40 years, a few decades ago, to about 70 years. Most of the youth are gainfully employed in airport security, local police, administration and in the tourism sector. As part of social re-engineering and population control drive, about 20 per cent Hans have settled in Tibet. Most of the villagers and nomads have been settled in model village clusters that have roads, internet connectivity, electricity, schools, horse playgrounds, comfortable houses and sheds for the herd. Schooling till 12th standard is compulsory. Mandarin is compulsory from the first class level and is a criterion for getting government jobs. In fact, majority of youth in Lhasa now speak Mandarin and lure for Tibetan language is fading.

Amidst the razzle-dazzle of modernity, Tibetan Buddhists feel major spiritual deficit and a loss of inheritance. The institution of Dalai Lama is revered as a spiritual and temporal head since the time of recognition of 4th Dalai Lama by the Mongol king and the 5th Dalai Lama by the Chinese emperor. The Indian Buddhist connection is vivid in every nook and corner of 7th Century old Jokhang temple and Potala palace. Jokhang temple's architectural style is a mixture of Indian Vihara design and also Tibetan and Nepalese designs. In 1049 AD, Atisha, a renowned teacher of Buddhism taught in Jokhang. Around the 14th century, the temple was associated with the Vajrsana in India. Shankarakshita and Padmasambhava are highly regarded spiritual heads whose statues are installed prominently in the temple complex. The priceless

ancient statue of Jowo Sakyamuni, that is, the Buddha at the age of 12, is the most venerated religious image in Tibet. In Potala palace, there exist photographs and Tombs of previous Dalai Lamas. One can see pictures of Karmapa in some tourist Taxis. The reason assigned for permitting display of picture of Karmapa is that in contrast to the 14th Dalai Lama, he has never criticized China. Chinese consider Dalai Lama a splitist for his demand of Greater Tibet that would entail re-constituting the boundaries of four existing Chinese provinces or autonomous regions, Sichuan, Qinghai, Gansu, and Yunnan. Such an idea of redrawing the boundaries on the ethnic lines is deemed as being secessionist and hence it is a Red Line for the CCP leadership.

CCP has done away with the system of adopting Lamaism at a young age. The children cannot go to seminaries till they have acquired formal education unto the 12th standard (18 years of age) in the government schools. Also, Chinese have put their own people in the management of Buddhist shrines, who provide a strict oversight on how these shrines are run. China thinks this is necessary to control corruption in the monasteries. The effect of social re-engineering is manifest in the streets of Lhasa, where more youth are attired in swanky dresses playing with their smartphones than dressed in traditional costumes with their fingers on the beads.

Evolving Sino-Indian Relations

Post the Wuhan Summit, China has decided to whip up interaction with India at all levels with a view to gauge and shape India's perceptions. While they respect India's resolve to maintain strategic autonomy, the skepticism about growing strategic proximity between India and the US persists. China perceives that signing of Logistics Exchange Memorandum of Agreement (LEMOA), Communications Compatibility and Security Agreement (COMCASA) and possibly Basic Exchange and Cooperation Agreement (BECA) in the near future is bound to make India and the US as de-facto strategic allies, which would be inimical to China's interests. China, therefore, seeks to improve relations with India, lest it out-rightly falls in the US orbit. Also, China is keenly watching how India and Russia steer their strategic relations and execute recent defence deals in the face of Countering America's Adversaries through Sanctions Act (CAATSA) imposition. In the Chinese view, India wields

considerable influence in South Asia and inter alia resorts to coercive strategy, particularly with Nepal, Sri Lanka and Maldives. They felt that India tried to intimidate the outgoing regime in Maldives but without much avail. China would keenly watch how India deals with the new regime in Maldives. There are concerns about politico – economic stability in Pakistan. Given the Pakistan's sensitivity vis-à-vis India, there is unlikely to be any significant policy shift in Beijing on Pakistan, which has become a lynchpin in Beijing's South Asia/Indian Ocean Region strategic calculus. There is a yearning to enhance economic engagement with India, particularly on extension of Nathula trade route to Kolkata, China - Nepal - India Economic Corridor, Bangladesh–China–India–Myanmar (BCIM), connectivity from Kunming to Assam, export of Darjeeling tea and expansion of item list for the border trade.

Conclusion

The Chinese look at the geopolitical issues purely from the prism of their core interests and seem to have hazy understanding of India's core interests and concerns. They candidly admitted the need to interact frequently with India's strategic community to develop a balanced perspective on India. The evolving geopolitical scenario demands that Beijing focuses on the US challenge and avoids any overt confrontation with India. However, the ongoing thaw in the bilateral relations notwithstanding, the Sino- India relations will continue to be characterized by three Cs; Cooperation, Competition and Conflict. China is cognizant of India's growing economic heft and resolve to protect its core interests. Realpolitik on the part of China demands a tactical adjustment to steer relations with India to a manageable level so that the American challenge is mitigated.

South Asia / Indian Ocean Region (IOR) is virtually the centre of gravity of China's BRI. The successful completion of CPEC, China - Nepal Economic Corridor, China Myanmar Economic Corridor, Kyakphu port in the Bay of Bengal, Gwadar port in the Arabian Sea and critical infrastructure in Bangladesh, Sri Lanka and Maldives (the Maritime Silk Road signatories) is bound to alter the strategic landscape of the region to China's advantage. India and China will compete for domination of resources, location and influence. Structural factors in the relationship suggest that Sino-Indian relations will be marked by intensified competition. There is

a widening gap in the Comprehensive National Power of India and China. Beijing is constantly gaining a competitive advantage in the strategic balance vis-a-vis New Delhi. We need to have a nuanced understanding of the new “modus vivendi” with China. We should be deft in our assertions to make China understand and heed India’s core interests and sensitivities. In the meanwhile, the window of heightened strategic brinkmanship between China and the US should be utilised to build capacities to reclaim influence in the strategic neighbourhood and acquire a favourable strategic posture vis-à-vis China. Concurrently, measures to build strategic trust, complementarities and interdependence with China must continue with dignity and sincerity. Finally, India must heed the Theodore Roosevelt maxim, “speak softly and carry a big stick; you will go far”. For India, implies achieving credible deterrence and showing deft diplomacy in engaging China.

US - China Heated Cold War finds Taiwan as a Sensitive Spot

Major General S B Asthana, SM, VSM (Retd)[®]

USA has selected the most sensitive spot of China in a sequential escalation of US - China 'Heated Cold War'. The signing of Taiwan Travel Act, sale of modern equipment and sending of two warships to Taiwan Straits clearly indicates that USA and its allies will insist on freedom of navigation, and the globe may not silently take unilateral interpretation of China about its history of accepting South China Sea as China's lake. China perhaps needs to get ready for escalation dynamics, having made the first move of creating features into artificial islands in South China Sea and then creating military infrastructure and arming these artificial islands to force its claim of sovereignty on water, which the world perceives as global common. The military posturing is continuing. However, both sides have been sensitive enough to avoid a trigger to spiral the escalatory chain of incidences. President Tsai Ing-wen faces an unprecedented challenge of balancing between Beijing's coercion, Taiwan's National Interest, meeting aspirations of people and peculiar strategic concerns arising amidst 'Heated Cold War' in Indo-Pacific Region, involving other powers also. The political pressure is already evident by President Xi Jinping's directions to PLA for getting ready for war, his threatening speech in 19th Communist Party of China (CPC) National Conference and in Jan 2019. Beijing warning of no further talks with Taiwan, unless she accepts 1992 consensus, and President Tsai Ing-wen referring to her administration as the "Taiwanese government" right from her first meeting as President, with Palauan President¹.

Does USA realistically follow 'One China Policy'?

When US President Donald Trump assumed office he had enquired about 'One China Policy' to which Chinese reacted immediately and the issue did not pick up further attention. Historically United Nations in 1971 voted for Beijing to replace Taiwan in the China seat. In a joint Communication with PRC in 1972, US had adopted

[®]Major General S B Asthana, SM, VSM (Retd) is a former Additional Director General Infantry. He is a strategic and security analyst. Presently he is the Chief Instructor at the USI.

the line of No declaration of independence by Taiwan, No UN seat and no representation in an international organisation, which requires only one membership for a country, in respect of Taiwan. US, however, remains opposed to any unilateral changes in status quo by either side. In the “Shanghai Communiqué” the United States did not challenge the claim that there was one China and while restating for a peaceful resolution to the issue, also agreed to reduce US forces on Taiwan. Finally in 1979, US diplomatic ties with Taiwan were officially broken, in keeping with the US acknowledgement ‘**One China Policy**’. Many Americans felt that it was “abandonment” of Taiwan. Soon after diplomatic relations were established with the PRC in 1979, the U.S. Congress passed the “**Taiwan Relations Act.**” to ensure peace, security and stability in Western Pacific, which sought to grant Taiwan the same privileges as a sovereign nation, though it no longer recognized it as one, and it promised to **make available “such defence equipment and services, as may be necessary to enable Taiwan to maintain a sufficient self-defence capability.”** It indirectly implies that under this Act despite following One China Policy, US besides equipping Taiwan with modern weaponry for self defence, could come to its rescue, if its survival was threatened.

When President Donald Trump **approved the ‘Taiwan Travel Bill’ allowing American representatives to meet their counterparts on the self-ruled Taiwan** calling itself “Republic of China”, he was conscious of their ‘One China Policy’ and the likely reaction of Chinese, which I am sure would have been well thought through. **This is sequel to newly declared Trade War by US, slapping very heavy trade tariff on China.** The travel bill was quickly followed by visit of Alex Wong, Deputy Assistant Secretary of State in the East Asian and Pacific Affairs Bureau, visiting Taipei in next two days for discussions.² It reconfirmed the firm resolve of US in **signalling no walk over from the heated Cold War pertaining to this Island, which originally started with passing of the Taiwan Relations Act, 1979.**

What does Taiwan want?

Ever since Communist Party of China (CPC) took control over Peoples Republic of China (PRC) and Republic of China (ROC) Government fled to Taiwan in 1949, **Taiwanese historians maintain that they represent entire China and lost mainland**

to PRC in a civil war, which has not yet been officially declared to be over. Bruce Jacob (2018)³ argues that specialists in international law agree that the **Convention on Rights and Duties of States signed in Montevideo on 26 Dec, 1933, is the key document on statehood.** According to Article 1 of this Convention a state has “a) a permanent population; b) a defined territory; c) government; and d) capacity to enter into relations with the other states.” Taiwan clearly and easily meets these requirements for statehood. Furthermore, Article 3 emphasises that “the political existence of the state is independent of recognition by the other states.” **This means that even if no country recognises it formally, Taiwan is still a state.** Taiwan is a democratic sovereign society having its own democratically elected Government, own constitution, own defence forces, own currency, strong economy, with population exceeding more than three-quarters of the world's nations; and territory larger than two-fifths of the world's nations. It, therefore, technically qualifies to be recognised as a separate state by international community, but International politics is preventing majority of nations from doing so. It is worth noting that, in fact, many countries such as the US and Australia already have de facto “one China, one Taiwan” policies, although they do not admit this, says Bruce in Taipei Times. This denotes the sensitive spot for China, which claims it to be a part of China.

Taiwan is a member of WTO, Pacific Economic Cooperation Council, Asia Pacific Economic Cooperation forum as Chinese Taipei, and has been participating in Olympics by the same name, so far. Being an economic and technological giant, Taiwan aspires for greater position and role in international environment. The return of Democratic Progressive Party (DPP) historically perceived to be supportive of independence from China over Kuomintang (KMT) perceived to be supportive of CPC, in 2016, echoed a spirit of having a free, democratic society and economic prosperity. Recently after suffering a major setback in local body elections for two mayoral seats, seen to be due to domestic issues; President Tsai Ing-wen resigned as chairwoman of DPP. She, however, clarified that her policies of ‘Status quo’ of island and towards China will not change. Taiwan has politically active population. Many surveys have proved that increasing number of people of **Taiwan have started identifying themselves as ‘Taiwanese’** and feeling of nationalism is on the rise. They want to enjoy their

freedom, democracy and prosperity. Majority of Taiwanese population prefers status quo instead of economically disastrous war for independence.

Taiwanese do not want to be under communist regime, and have been echoing slogans to defend their country, should such a situation arise. Taiwan seems to be deliberating on divorcing the 'Chinese' part of its name with which it has been participating in Olympics. It held referendum on 24 November 2018, to this effect which indicates the mood of Taiwanese people, although it got defeated by 10 per cent margin, as IOC had conveyed its unwillingness, creating a fear in majority of Taiwanese about cancellation of participation. At the Golden Horse awards, the **best documentary prize went to 'Our Youth' in Taiwan, which narrates an examination of the 2014 pro-Taiwan independence Sunflower Movement.** In her acceptance speech, director Fu Yue expressed her hope that Taiwan would one day be recognized as "a truly independent entity," adding that such recognition was her "greatest wish as a Taiwanese".³ While it may appear to be a creative signalling, but it gives out the mood and wish of Taiwanese people.⁴

Why is Taiwan such a sensitive spot in US- China Showdown?

China claims Taiwan as its integral part, and any effort towards its independence will affect Chinese reputation to protect its sovereign territory. PRC passed the Anti-Secession Law in 2005, authorising war if island formally declares statehood. The reunification of Taiwan continues to be a dream for Chinese and they refuse to denounce the use of force in doing so, if required. Taiwan is an economic powerhouse of China, habituated by Han Chinese majority. After successful peaceful experience of reunification of Hong Kong, Chinese continue to look at 'Peaceful National Reunification' favouring economic integration of Taiwan. China, however, continues to make threatening gestures towards Taiwan to keep ideology of independence under check.

Taiwan is crucial for strategic dominance of South and East China Sea and Asia Pacific Region. US has major trade (computer hardware and ease of transshipment of goods in Asia) interests in Taiwan besides strategic dominance. US will, therefore, prefer to have a democratic, prosperous, independently governed Taiwan as an ally, where they have adequate strategic and economic leverage, instead of it forming part of Communist China.

Chinese Frustration

China expressed deep concerns to the United States after two American warships passed through the Taiwan Strait. China conveyed that the Taiwan issue concerns the sovereignty and territorial integrity of China and is the most important and sensitive issue in the China - US relationship⁵. **Under the hard pedalling of Trade War, US have made some quick moves to make Taiwan stronger and bolder to take on Xi Jinping's ire.** In a bid to pressurise China and pursuing 'America First' policy US is looking at sizeable sale of most advanced weapons to Taiwan, which is also seeking to buy more advanced weapons from the United States and to integrate its companies in the US defence industry supply chain. US is expected to approve another round of arms sales to Taiwan in the near future, according to Rupert Hammond-Chambers, president of the US-Taiwan Business Council based in Chicago. It would be the third round, since Trump took office, following a US\$330 million deal in September 2018⁶. Taiwan will also get upgraded F-16V fighter jets, after US arms sale is finally approved. The other equipment planned to be inducted includes 66 T-5s – trainer aircraft to be manufactured by Taiwan's Aerospace Industrial Development Corporation likely by September 2019; building submarines, new generation patrol boats, and torpedo and missile vessels to boost the naval defences. These are new measures to put China under pressure for its adventurism in South China Sea. Taiwan has budgeted several billion US dollars for arms procurement and to build up military in next two years, as per deputy minister of Taiwan.

President Xi Jinping since his address to 19th Congress of CPC has repeatedly given a strong message to Taiwan to stop dreaming of separate nation or an entity independent of PRC. It was obvious and well anticipated that Xi will be deeply frustrated by such an act, who is already unhappy with President Tsai meeting dignitaries as Head of State, from the time she came to power. After last NPC which made him the strongest power centre after Mao Zedang, with no limit on his re-election, his nationalistic messages promising to crush any efforts to "divide the nation", or "Every inch of the territory of our great country cannot be separated from China," did amuse the domestic population, but has not stopped US officials from visiting Taiwan. In Taiwan the DPP Government (Quite used to frequent threats

from China), did not look to be intimidated, by symbolic move of Liaoning coinciding with the Xi's speech, treating it as 'Business as usual'. His coercive words during 19th Congress have not worked. This has brought US and Taiwan closer and much sooner than Xi Jinping would have expected. In fact in **November 2018, President Tsai said "We will not retreat an inch,"** referring to growing **military intimidation from the mainland, after induction of two former US Perry-class guided missile frigates to boost the island's anti-submarine defences.**⁷ Taiwan is even thinking of hosting US Warships in Taiping island for regional security.

Will China really seek Reunification of Taiwan by Force?

President Xi Jinping has ordered the **Southern Theatre Command responsible for monitoring the South China Sea and Taiwan** to assess the situation it is facing and boost its capabilities so that it can handle any emergency, **implying to get ready for war**⁸. The rhetoric in Chinese media and speeches of President Xi Jinping notwithstanding, **China may not find it worthwhile to take Taiwan by force** due to variety of reasons discussed in succeeding paragraphs.

Firstly, bulk of Taiwan's investments are already in China. Roughly **25 per cent of Taiwan's trade is now with China, which is its largest trading partner. China has replaced US as No 1 destination for Taiwanese export, accounting for approx 41 per cent** of total exports (Hong Kong included), with Taiwan having a trade surplus of approximately US \$ 30 billion with China. It runs a trade surplus with many economies, including US and fifth largest foreign exchange reserve in the world. A cross Strait War is, therefore, not in the economic interest of both.

Secondly, it will amount to **crossing red line of the US, which although follows One China Policy, but treats Taiwan no less than an ally. It had earlier indicated that any unilateral change of 'status Quo' in Taiwan as a red line.** China has to cater for the repercussions in its strategic calculations. Moreover; Chinese redline of "Taiwan going nuclear/declaring independence" has not yet been crossed.

Thirdly, **China has enough missile arsenals to destroy Taiwan, but such a destruction of Han Chinese, who have relations, investments and inseparable linkages with their relatives in mainland will not go well with domestic population**

of mainland. Over two million Taiwanese live in China, mostly in Coastal areas, and over 20 per cent have married there. This will also destroy Chinese and Taiwanese economy, which does not suit Chinese leadership struggling to revive its economy with trade war on.

Fourthly, **Chinese amphibious capabilities to capture Taiwan are doubtful, more so, if US aircraft carriers are around.** US is unlikely to give a walkover in Taiwan Straits leaving Taiwan to its fate, because a Taiwan aligned to US is in their strategic and economic interest.

Fifthly, getting Taiwanese (who are used to democracy) under its wings will also **bring a fresh democratic wave in China, which CPC is not used to handling with Hong Kong also echoing similar voices. Bulk of Taiwanese people do not want to sacrifice their democratic freedom, and prosperity,** and are not interested in fighting China. **Status quo ante is the most popular choice of their people.** It is felt that China's plan to take Taiwan by Force may not pass their cost-benefit test. **A 'Peaceful stability framework' based on the principle of No Chinese military intrusion and No formal declaration of independence by Taiwan for the next few decades may be a practical and popular solution between China and Taiwan.** Beijing with infrastructure diplomacy has been able to poach five countries, earlier recognizing Taiwan, leaving only 16 countries including Vatican City recognizing it. **Re-unification in short term is, therefore, not practicable, however, it may continue as a long term dream.**

How does Taiwan Situation affect India?

Today Taiwan is looking at developing alternate trade partners with Asian democracies like India, as it is apprehensive of putting all eggs in one basket (PRC). Taiwan is looking for cheap labour, raw materials, skilled, english speaking manpower and good infrastructure, which is available in India, along with mega consumer market. India has improved its rating on 'Ease of doing Business', but needs to compete with other newly developing manufacturing hubs like Vietnam and Thailand. For India Taiwan can be a potential source of FDI, technological and economic exchanges. India's bilateral trade with Taiwan was US \$6.7 billion in 2017 comprising US \$3.3 billion exports to India and about US \$3 billion in imports

and is likely to increase by 15 to 16 per cent in 2019. Taiwanese authorities have been mooted various proposals to improve investments in India, besides exchanges of cultural groups, academics and Research institutes, and Taiwan has emerged as a preferred destination for Indian technical manpower. Taiwanese investments in India have risen to US\$ 5 billion, and mutual tourism is on upswing. The Indian approach to Taiwan is through development of bilateral exchanges in trade and education. Taiwan is a hardware and biotech giant, which possesses the world's largest computer hardware industry. Integration of Indian booming software market and Taiwanese hardware industry has tremendous trade potential and could help to counter the Chinese electronics boom. For India relations with Taiwan could prove useful both in terms of industrial development, economic growth and strategic reach. Strategically India needs to engage it, as both face common strategic concerns. It could be useful in intelligence sharing and professional exchanges pertaining to defence of island territories. Taiwanese investment in mainland China are declining since the onset of Trade war. India has a big market and can be a viable FDI destination.

Taiwan's economic growth is facing problems with Beijing. With growing prosperity, its labour costs have shot up many times as compared to China. Several manufacturing industries have shifted to China to reduce costs on account of labour as well as transportation of raw materials (which are scarce in Taiwan), Taiwan is thus concentrating on high technology industries like semi-conductors and biotechnology. Cumulative Taiwan's investment in mainland could be more than 78 billion US dollars (2017) as per the island's financial supervisory authority.

Taiwan is a sensitivity for Beijing, and an obvious choice for US to build pressure on China in the light of ongoing strategic competition. Taiwan wants to develop its own military capability to be able to maintain status quo, if not independence and withstand coercion of China. Notwithstanding the above, fearful Taiwan under Chinese influence does not suit the US. If US can sell its military hardware, it will be to President Trumps delight. China has demonstrated that it is an expansionist power that breaks a host of international conventions quite willingly. As we can see, many democratic powers are now huddling to counter Chinese aggressive design, which could be morale booster for Taiwan to work with

them to establish foreign relations on a new basis. As per Jacob Bruce 'both are nations of the world and both should be recognized as such'.⁹ While everyone may not buy his views, but a shift in its aspirations is noticeable.

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India-Japan Collaboration in the Indo-Pacific

Asoke Kumar Mukerji®

Abstract

India-Japan collaboration in the Indo-Pacific had its origins more than a decade ago in the concept of the “confluence of the two seas” proposed by Prime Minister Shinzo Abe of Japan in India’s Parliament in 2007. Since then, the two countries have articulated a holistic framework for the Indo-Pacific, defining it to include both the Indian and the Pacific Oceans. They have announced an integrated Indo-Pacific strategy in which the rule of international law, maritime security, technology, connectivity and the increased participation of Africa play a prominent role. The collaboration between India and Japan, two declared candidates for permanent membership of a reformed UN Security Council, in the Indo-Pacific will have significant consequences both for their bilateral relationship as well as the wider region.

Background

During his address to the Parliament of India in August 2007 Japan’s Prime Minister Shinzo Abe spoke on the theme of “the confluence of the two seas”, injecting the strategic concept of today’s Indo-Pacific framework into the highest political level of India-Japan bilateral relations. Quoting from the writing of Dara Shikoh in 1655, Prime Minister Abe anchored the philosophy behind this strategic framework in the words of Swami Vivekananda, “the different streams, having their sources in different places, all mingle their water in the sea”.¹

More than a decade after this speech, the bilateral momentum for implementing such a holistic strategic framework of the Indo-Pacific appears to be on an upswing. In 2007, Prime Minister Abe had emphasized the spirit of tolerance, rather than confrontation, for the emergence of a “broader Asia”. The objective of this “arc

®Shri Asoke Kumar Mukerji, IFS (Retd) is an elected member of the USI Council. He is a former Permanent Representative of India to the United Nations in New York.

of freedom and prosperity” would be an “open and transparent network” which would “allow people, goods, capital, and knowledge, to flow freely” in the “outer rim of the Eurasian continent”.²

The Indo-Pacific policy framework

India’s Indian Ocean strategy was articulated during Prime Minister Narendra Modi’s official visit to Mauritius in March 2015, when he spoke of “Security and Growth for All in the Region” or SAGAR. The five pillars of SAGAR are: (i) to safeguard India’s interests and position; India as a net security provider in the region; (ii) to enable India’s contribution to the enhanced maritime security capabilities of the region; (iii) to advance peace and security through collective action and cooperation in the maritime domain; (iv) to bring about integrated sustainable development of the region, including Blue or Ocean Economy; and (v) to ensure that the primary responsibility for peace, stability and prosperity of the region lies on the countries of the region. The policy welcomed cooperation with external partners in meeting these objectives.³

India’s Indo-Pacific policy was outlined by Prime Minister Narendra Modi in June 2018. Speaking at the Shangri La Dialogue in Singapore, he defined the Indo-Pacific region as stretching “from the shores of Africa to that of the Americas”. India supported the establishment of a free, open and “inclusive” region, emphasizing the “ASEAN centrality” of the Indo-Pacific. The success of this objective is dependent on equal access to common spaces in the region, upholding a “rules-based order” to create an open, balanced and stable trade environment. Highlighting the critical importance of connectivity in the Indo-Pacific, the Prime Minister reiterated India’s position that “contests must not turn into conflicts”.⁴

Japan’s “Free and Open Indo-Pacific Strategy” announced in 2017 as a “new foreign policy strategy”, carries forward the initiative taken by Prime Minister Shinzo Abe in 2007, and takes a “panoramic perspective” of the world. It is based on “the principle of international cooperation”. It combines the two continents of Asia and Africa and the two oceans, viz. the Pacific and Indian oceans, “envisioning the above as an overarching, comprehensive concept”. The objective of the policy is to “improve ‘connectivity’ between Asia and Africa through free and open Indo-Pacific and promote stability and prosperity of the region as a whole”.⁵

India and Japan have identified five principles to implement their common approach to the Indo-Pacific region. These were contained in their joint statement “Toward a Free, Open and Prosperous Indo-Pacific” issued after the visit of Prime Minister Abe to India for the Annual Summit in September 2017. They include respect for sovereignty and international law; resolution of disputes through dialogue; freedom of navigation and overflight for all countries, large or small; sustainable development; and a free, fair and open trade and investment system.⁶ The Vision Statement issued after the October 2018 Summit reiterates the “unwavering commitment” between India and Japan “to working together towards a free and open Indo-Pacific.”⁷ The statement specifies that “this synergy is embodied in collaborative projects between India and Japan in the Indo-Pacific region, including in Sri Lanka, Myanmar and Bangladesh as well as in Africa”.⁸

Areas of Cooperation

India-Japan cooperation in the Indo-Pacific is currently focused on six areas. These are upholding the rule of applicable international law, especially for the freedom of navigation along sea lanes of communication; enhancing maritime security; operationalizing defence technology collaboration; creating connectivity; countering the threat from non-state actors; and integrating the eastern coast of Africa into the Indo-Pacific.

1. Upholding International Law

India and Japan place a strong emphasis on the application of international law in the Indo-Pacific region, using both United Nations General Assembly treaties like the 1982 United Nations Convention on the Law of the Sea or UNCLOS, as well as UN Security Council resolutions on maritime security. Given their public aspirations to become permanent members of a reformed UN Security Council, this emphasis assumes significance at a time when international law is being challenged through unilateral policies and measures, including in the Indo-Pacific.

India and Japan are state parties to UNCLOS, having ratified it in 1995 and 1996 respectively. This legal framework provides predictability and stability for India-Japan collaboration in the Indo-Pacific. The India-Japan Vision Statement of October 2018 unequivocally confirms the commitment to seek a “peaceful resolution of disputes with full respect for legal and diplomatic

processes in accordance with the universally recognized principles of international law, including those reflected in the UNCLOS, without resorting to threat or use of force”.⁹

2. Securing the Maritime Domain

The security of the maritime domain of the Indo-Pacific is the primary pre-requisite for the successful implementation of the India-Japan Indo-Pacific strategy. In September 2014, the two countries had decided to elevate their relationship to a “Special Strategic and Global Partnership” at their Summit in Tokyo during Prime Minister Modi’s “first destination for a bilateral visit outside India’s immediate neighbourhood”.¹⁰ The meeting prioritised the regularisation of “bilateral maritime exercises as well as to Japan’s continued participation in India-US Malabar series of exercises”. A dialogue mechanism and joint exercises between Indian and Japanese Coast Guards was agreed to. In September 2017, this cooperation was extended to “strengthening and enhancing exchanges in expanding maritime domain awareness (MDA) in the Indo-Pacific region.”¹¹

3. Defence Technology Cooperation

Within the Indo-Pacific framework, India and Japan are exploring the “transfer and collaborative projects in defence equipment and technology between the two countries.”¹² Japan’s sustained support for India’s entry into international dual-technology use regimes¹³ has played an important role in conceptualising such cooperation. In September 2017, the two sides listed “surveillance and unmanned system technologies, and defence industry cooperation” as the areas which would be focused on for this purpose. Increased cooperation between the Indian Navy and Japan’s Maritime Self-Defence Force in the anti-submarine sphere, as well as Japan’s offer to “provide its state-of-the-art U2 amphibian aircraft” were identified for priority cooperation.

4. Connectivity

Connectivity and keeping the sea lanes of communication (SLOC) open are critical dimensions of India-Japan convergence in the Indo-Pacific. In his 2007 address to India’s Parliament, Japanese Prime Minister Shinzo Abe had highlighted that “as maritime states, both India and Japan have vital interests in the security of sea lanes”.¹⁴ The initial focus on the Pacific Ocean (South China Sea)

SLOC has been expanded to encompass other SLOCs across the entire Indo-Pacific. In their joint statement after the 2016 Summit, the two Prime Ministers had stressed that “improving connectivity between Asia and Africa, through realizing a free and open Indo-Pacific region, is vital to achieving prosperity of the entire region.”¹⁵

In addition to the Straits of Malacca and the South China Sea, the relevant SLOCs for both India and Japan include the Bab al-Mandab strait in the Red Sea, which connects the maritime traffic from the Mediterranean Sea to the Gulf of Aden in the western Indo-Pacific, and the Straits of Hormuz connecting the Gulf to the western Indo-Pacific. This is due to the critical role played by these two SLOCs for international trade, including energy products, for both India and Japan.

The safety of merchant shipping through the Gulf of Aden is one of the urgent and critical issues for Japan.¹⁶ In 2016, as much as 85 per cent of the 1.23 billion barrels of crude oil and 20 per cent of the 83 million tons of Liquefied Natural Gas (LNG) imported by Japan, were transported using the SLOC through the Straits of Hormuz from the Gulf.¹⁷

India relies on the SLOCs of the western Indo-Pacific for the transportation of her merchandise trade. The United Arab Emirates, located inside the Gulf and accessible mainly through the Straits of Hormuz, is India’s biggest trading partner in the region, with two-way trade totalling \$52 billion in 2016-17.¹⁸ Most Indian ports for energy imports are located along India’s coast facing the western Indo-Pacific, with 53 per cent of India’s crude oil imports coming from the Gulf region alone in 2015. India is the 7th largest importer of LNG in the world. 62 per cent of India’s total imports of LNG were sourced from Qatar in the Gulf in 2015.¹⁹ The major sea lanes of communication using the Bab al Mandab route in the western Indo-Pacific transport a significant volume of India’s foreign trade with the European Union, valued at over 85 billion Euros in 2017,²⁰ as well as with Russia and North America.

For both India and Japan, the security of the SLOCs in the western Indo-Pacific is dependent on the stability of this region. For India, an additional imperative is the presence of about eight million Indian nationals working as migrants in the Gulf, a number larger than most of the national populations of the Gulf region,²¹ except Saudi Arabia, who remit almost \$45 billion annually into

India's household economy, and whose presence is vital to the stability and prosperity of the Gulf economies.

The inclusion of "infrastructure and connectivity for Chabahar", the Iranian port that would promote "peace and prosperity in South Asia and neighbouring region, such as Iran and Afghanistan, through both bilateral and trilateral cooperation". The 2016 India-Japan Summit joint statement²² significantly broadens their Indo-Pacific cooperation to integrate the littoral hinterland of the north-western Indo-Pacific.

5. Countering threats from Non-state Actors

Countering the threat to the Indo-Pacific from non-state actors such as terrorists and pirates makes India-Japan cooperation of great value bilaterally as well for the littoral states of the Indian Ocean Region. Terrorism launched from the western Indo-Pacific had targeted Mumbai in November 2008. In their Vision 2025 Statement on Special Strategic and Global Partnership, India and Japan "affirmed the importance of bringing the perpetrators of terrorist attacks including those of November 2008 terrorist attack in Mumbai to justice."²³

The commitment of Japan to countering terrorism which has its links in the western Indo-Pacific hinterland had been highlighted earlier in Prime Minister Abe's statement on 1 February 2015 after the killing of Japanese hostages by terrorists in Syria. He said "I am infuriated by these inhumane and despicable acts of terrorism, and resolutely condemn these impermissible and outrageous acts. I will never forgive these terrorists. I will work with the international community to hold them responsible for their deplorable acts. Japan will never give in to terrorism."²⁴

A second visible threat to the security of the western Indo-Pacific is from piracy, targeting the SLOC through the Gulf of Aden. India and Japan have participated actively in ensuring the effectiveness of the Contact Group on Piracy off the coast of Somalia (CGPS), established by the UN Security Council Resolution 1851 in December 2008.²⁵ Japan has deployed two ships and reconnaissance P-3C aircraft as part of its contribution to the CGPS. Since commencing duties in June 2009, "the aircraft have flown 1,951 missions as of 31 December 2017 and their flying hours total 14,910 hours. Approximately 162,000 ships have been identified and information has been provided to vessels

navigating the area and other countries engaging in counter-piracy operations on around 13,160 occasions.”²⁶

India has similarly deployed its naval ships to secure the sea lane of communication through the Gulf of Aden. The Indian Navy began its patrols in the Gulf of Aden from 23 October 2008, escorting merchant ships across the 490 nautical mile long and 20 nautical mile wide corridor. As many as 25 Indian Navy ships had been deployed for this purpose till 2016.²⁷

6. Cooperation in Africa

The focus on Africa as an integral part of bilateral collaboration between India and Japan in the Indo-Pacific is of immense significance, as it seeks to create the infrastructure and capabilities on the western rim of the Indo-Pacific to sustain the vision of the two countries. The broad framework for collaboration with Africa is contained in the India-Africa Framework for Strategic Cooperation announced in October 2015²⁸, and the Nairobi Declaration of Japan’s Sixth Tokyo International Conference on African Development (TICAD VI) issued in August 2016.²⁹

The India-Japan Summit in November 2016 synergized the objectives of both countries to connect Africa with Asia as an integral part of the Indo-Pacific framework. In the joint statement issued after the Summit, both sides “stressed that improving connectivity between Asia and Africa, through realising a free and open Indo-Pacific region, is vital to achieving prosperity of the entire region.” Specifically, the two Prime Ministers underlined “the potential that the collaboration of India and Japan in realizing prosperous Indo-Pacific region in the 21st Century. They decided to draw on the strength of shared values, convergent interests and complementary skills and resources, to promote economic and social development, capacity building, connectivity and infrastructure in the region”, including through Japanese Official Development Assistance (ODA) projects.³⁰

In this context, the “Platform for Japan-India Business Cooperation in the Asia-Africa Region”³¹ and idea of an Asia-Africa Growth Corridor proposed in 2017³² stand out.

Djibouti, located at the mouth of the SLOC connecting the Suez Canal to the Gulf of Aden, and home to military bases from the United States, France, Japan and China,³³ has emerged as a

major focal point for India-Japan collaboration in the western Indo-Pacific. The Indian Navy used Djibouti for operational tasking during anti-piracy operations under the CGPS. Djibouti was also the launch pad for India's "Operation Rahat", which involved the use of Indian warships and Air Force to assist in the evacuation of 4000 Indian nationals, as well as nationals of 35 different nationalities, stranded by the outbreak of civil war in Yemen in March 2015. This was highlighted during the historic first-ever visit of the President of India Shri Ram Nath Kovind to Djibouti in October 2017.³⁴ Japan's integration of Djibouti into its Indo-Pacific strategy was publicly stated during the visit of Japan's Foreign Minister Taro Kono to Djibouti in August 2018, when he conveyed that Djibouti was "an important partner for Japan to implement its Free and Open Indo-Pacific Strategy".³⁵

Conclusion

The visible contours of India-Japan collaboration in the Indo-Pacific have already demonstrated a positive impact, carrying into the region a strong advocacy for international cooperation for mutual benefit. Based on this reality, it is possible to envision the rapid expansion of this collaboration to transform the region, especially the western Indo-Pacific which revolves around the centrality of the Indian Ocean.

Endnotes

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⁶ India-Japan Joint Statement "Toward a Free, Open and Prosperous Indo-Pacific", 14 September 2017, Gandhinagar. Available at <https://www.mea.gov.in/bilateral-documents.htm?dtl/28946/IndiaJapan>

⁷ India-Japan Vision Statement, 29 October 2018. Available at <http://pib.nic.in/newsite/PrintRelease.aspx?relid=184458>

⁸ Ibid.

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¹⁰ Tokyo Declaration for India-Japan Special Strategic and Global Partnership, 1 September 2014. Available at <https://www.mea.gov.in/bilateral-documents.htm?dtl/23965/Tokyo+Declaration+for+India++Japan+Special+Strategic+and+Global+Partnership>

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¹² See note 10 above.

¹³ Japan is part of the four main international regimes that regulate trade and transfer of dual-use technology. Of these four, India has joined three during the past two years. India joined the Missile Control Technology Regime or MTCR on 27 June 2016, facilitating access to technologies for her ambitious space launch programme. On 8 December 2017, India joined the Wassenaar Arrangement, which harmonizes export controls on dual-use technologies and munitions. India announced on 19 January 2018 that she had joined the Australia Group, in order to contribute to international security and non-proliferation objectives. Japan is a strong supporter of India's application to join the Nuclear Suppliers Group, the only one of the four regimes of which China is a member, and where China has held up India's application so far.

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²⁸ India-Africa Framework for Strategic Cooperation, 29 October 2015, New Delhi, para. 48. Available at http://www.mea.gov.in/Uploads/PublicationDocs/25981_framework.pdf

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³² Asia-Africa Growth Corridor, African Development Bank Meeting, Ahmedabad, India, 22-26 May 2017. Available at <http://www.eria.org/Asia-Africa-Growth-Corridor-Documents.pdf>

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Achieving the Asian Century: Challenges and Options

Major General Rajiv Narayanan, AVSM, VSM (Retd)[®]

Abstract

From the dawn of history Asia had dominated the world trade and the global space due to its rich heritage, mature civilizations and its socio-cultural values. However, internal fissures and struggles, lack of strategic vision and a certain level of complacency led to the stagnation of innovation. They were thus left behind in the revolutions in economic and military affairs leading to their colonisation, economic depredation and penury. However, post-independence the robust economic rise of Asian economies since the late 1970s - the opening up of China, under Deng Xiaoping, to US to garner economic support in the late 1970s, the Japanese economic juggernaut, the rise of the Asian Tigers and the opening up of India's economy in the 1980s and 90s led to the concept of 'The Asian Century' in the 21st Century. The gradual shift in the maritime trade centre of gravity to the Indo-Pacific Region symbolises this view despite scepticism in the West.

This paper analyses the concept of the Asian Century, the challenges that impede its actualisation and the options to achieve the same. It provides a broad outline for the way ahead based on the need for the rising / emerging / developed nations of Asia to come together, shed their historical and colonial baggage and contribute for the larger good of Asia, rather than limit their vision to their own growth at the expense of the rest.

It provides a good conceptual framework for achieving the Asian century in a phased manner by establishing an Indo – Pacific Regional Commission

[®]Major General Rajiv Narayanan, AVSM, VSM (Retd) is a Distinguished Fellow at the USI.

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centred amongst the nations of South (less Pakistan), South East and East Asia. The expansion to encompass other nations for achieving an Asian Union (akin to EU) would occur post stabilisation of this commission and based of the geo-political and geo-strategic dynamics in their regions.

From the dawn of history Asia had dominated the world trade and the global space due to its rich heritage, mature civilizations and its socio-cultural values. Endowed with fertile and large agricultural tracts, a rich tradition of farming, jewellery, pottery, metallurgy and cloth weaving, Asia controlled much of world trade till the 1st Industrial Revolution (Age of Steam Engines and Mechanical Production) around the mid-18th Century centred in Europe. By then the process of colonisation of Asia was underway, as such it was not only left behind in this economic revolution but also in the preceding revolution in military affairs (RMA), in the 15th -16th Centuries – brought about by the use of gun powder in firearms, cannons, armed ship armadas and in the force structures to effectively prosecute their usage.

By the time of the 2nd Industrial Revolution (Age of Science & Mass Production) in early 20th Century much of Asia was colonised and well on its way to penury, having being drained economically by its colonial masters. Mid-20th Century witnessed the independence of these colonised states post the Second World War even as the 3rd Industrial Revolution (The Digital Age) started gaining ground.

However, rising like a veritable phoenix from the ashes of the colonial depredations, the robust economic rise of Asian economies since the late 1970s led to the view of the possibility of an 'Asian Century' in the coming century. The resilient Asian economic performance in the early 21st Century, compared to the rest of the world, presents a strong case that it also holds the capacity to significantly alter the distribution of power at the world stage. Global leadership in a range of significant areas could witness a shift to Asia.¹

Yet challenges abound with internal, sub-regional, regional and external fault lines and fissures amongst nations – a legacy of the colonial past and historical baggage. Coupled with this are the economic, political, socio-religious fissures and the infrastructure

and energy voids that appear to restrict and restrain the rise of Asia. These fissures, if not pragmatically resolved or mitigated, could see the descent of Asia into conflict and instability thereby inhibiting its rise.

With the USA and Europe in an economic and strategic flux, Asia has a unique opportunity to achieve the Asian Century. For this the rising, emerging and developed nations of Asia, viz., China, Japan, India, South Korea, Thailand, Malaysia, Indonesia and Singapore (to name a few), need to come together, shed their historical and colonial baggage and contribute for the larger good of Asia, rather than limit their vision to their own growth at the expense of the rest.

This paper analyses the concept of the Asian Century, the challenges that impede its actualisation and the options to achieve the same.

The Asian Century

Asia was the leading economic power in the world stage till 17th – 18th Century. Endowed with large tracts of fertile land, temperate climate in most parts (especially South, East and South East Asia), a rich heritage in farming, pottery, jewellery, metallurgy and cloth weaving, it controlled much of world trade. For millennia Asian landmass was witness to mature civilisations, rich heritage and socio-cultural values. However, internal fissures and struggles, lack of strategic vision and a certain level of complacency led to the stagnation of innovation. They were thus left behind in the revolutions in economic and military affairs. The effective use of gun powder in war fighting by the West in firearms, cannons and armed ship armadas, signalled a gradual shift to the 2nd Generation Warfare. The armies of the east were found wanting when facing up to the West due to this vast technological asymmetry, leading to their gradual defeat and colonisation. The 1st Industrial Revolution that saw a transition from hand production to mechanical means of production was centred in the West and bypassed Asia.

Concurrently, the decline of the Silk Route due to the fragmentation of the vast Mongol Empire and internecine fighting between the various Khanates led to the West searching for a maritime trade route, especially to India. The initial footprint in Asia, by the West, was as traders, which gradually metamorphosed

into them becoming the rulers of various nations that they effectively colonised. With captive market for their industries, the hold on the resources needed for their industries from these regions and the slow strangulation of local industries, the economic decline of Asia commenced. Figure 1 shows the decline of the major economic contributors to World trade till colonisation, viz., India and China².

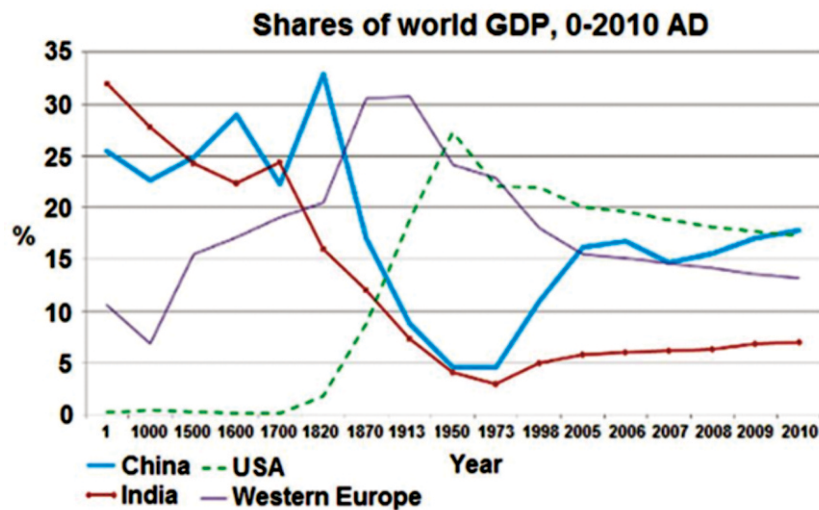


Fig. 1 : Shares of World GDP, ABC News, Dec 2011

The revival of Asia began with the rise of Japan, South Korea and Taiwan through major economic assistance from the US, being significant frontline states and allies in the East during the Cold War, as a bulwark against the spread of communism. This aspect was something similar to the US assistance and support in the reconstruction of Western Europe. The opening up of China, under Deng Xiaoping, to US to garner similar support in the late 1970s, even as the Japanese economy was being viewed as a juggernaut, led to its economic rise. The 1980s and 1990s saw the rise of the Asian Tigers and the opening up of India's economy that led to the concept of 'The Asian Century' in the 21st Century, considering the gradual shift in the maritime trade centre of gravity to the Indo-Pacific Region.

The robust performance of the Asian economy, as compared to the rest of the world, in the early 21st Century does seem to underline that Asia is on the cusp of transformation in its march towards prosperity. It needs the rising, emerging and developed

nations of Asia, viz., China, India, Japan, South Korea, Thailand, Malaysia, Indonesia and Singapore, to step forward for the larger good for Asia. Of the US\$ 74 Tn world GDP, while US constitutes a quarter of it, these eight emerging / rising / developed nations of Asia together contribute nearly 28 per cent ³ (Refer Figure 2 below). Similarly, if the foreign reserves are considered, these eight nations of Asia together possess over US\$ 20 Tn⁴ as compared to over 12 Tn held by USA.

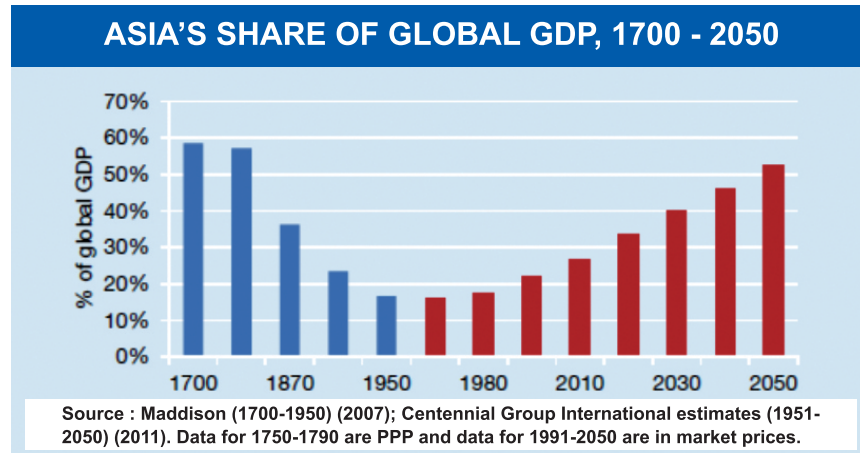
These nations could be the engines for the transformation of Asia. The ADB report on Asia 2050: Realising the Asian Dream, published on 31 March 2011 states, 'Asia is in the middle of a historic transformation. If it continues to follow its recent trajectory, by 2050 its per capita income could rise six fold in purchasing power parity (PPP) terms to reach Europe's levels today. It would make some 3 billion additional Asians affluent by current standards. By nearly doubling its share of global gross domestic product (GDP) to 52 per cent by 2050, Asia would regain the dominant economic position it held some 300 years ago, before the industrial revolution' (refer Figure 3).

While the timelines of the ADB report may be debated, considering the large voids in infrastructure and energy, institutional and governance issues and the various fissures within and amongst the nations, yet the basic contention that the Asian Century could be achievable seems to hold true. Challenges do abound, but if these are resolved pragmatically, for the larger good of the region, then Asia would become affluent and strong. However, the economics and social cost of missing this opportunity to achieve the Asian Century are staggering as it would render an Asia that is unstable and ridden with conflicts.

The Challenges to Achieving the Asian Century

On 25th September 2015, the UN General Assembly adopted Resolution 70/1 - '*Transforming Our World: The 2030 Agenda for Sustainable Development*'⁵, since been shortened as the 2030 Agenda⁶. It consists of 17 broad and interdependent goals (Sustainable Development Goals – SDG), yet each has a separate list of targets to achieve, totalling to 169 targets. While criticisms do abound on capacity to achieve these targets, yet these could form the basis for a new 'Asian Economic Strategy' to help the region achieve some semblance of sustainable development and the concomitant prosperity.





**Fig. 3 : Asia 2050: Realising the Asian Century –
ADB Report, Mar 2011**

Yet, challenges abound, the main being the development of infrastructure, energy sector, communication and water needs. As per the ADB Report of 23 February 2017, Asia needs an investment of around US\$ 26 Tn by 2030 (@ US\$ 1.7 Tn per year) till 2030 for achieving the SDG⁷. The major investments needed are,

- US\$ 14.7 Tn for Power;
- US\$ 8.4 Tn for Transportation;
- US\$ 2.3 Tn for Tele-Communications;
- US\$ 800 Bn for Water and Sanitation needs.

Apart for these infrastructure needs there are major socio-economic, political and security challenges that confront Asia, which need to be mitigated for Asia to achieve not just some progress on the SDGs but also to achieve the Asian Century. Some of the key socio-economic challenges are,

- the vast disparity between the haves and the have-nots:
- high level of poverty, health and educational issues: and,
- the demographic challenges.

The political challenges and governance issues that abound within the regions emanate from,

- lack of stability;
- autocracy versus democracy;
- legitimacy issues;
- corruption issues;
- religious and caste fissures;
- external interference in the internal affairs of nations; and,
- an acute lack of strategic trust between nations due to the historical baggage and colonial legacies.

Water is fast emerging as another major flash point, both within the states and between states. The rising population, issues between the upper and lower riparian states and poor water management coupled with climate change is leading to a severe water crisis, which is a major cause for concern. Many strategists have predicted that the future wars could be Water Wars that would be global in scale.

Security, both internal and external, is fast becoming a major destabilisation factor in the region. Use of non-state actors as a state policy, exploiting internal fissures for petty political gains, external support for regime change and internal instability to gain geo-political and geo-strategic space, and the expanding New Great Game to the Indo-Pacific region from West Asia and North Africa, is creating political and economic instability, much to the detriment of Asia's growth.

These challenges are compounded by the fact that there is no single overarching regional umbrella (akin to the EU) to be able to resolve or mitigate these challenges and derive a regional economic and security strategy to facilitate economic and political stability. There are multi-farious regional architectures within Asia that seem to be working at cross-purposes to each other.

Concurrently, a rising and revanchist China wants to gain sole leadership of Asia (first phase of China Dream) – something that is anathema to India and other like-minded democratic countries (Japan, South Korea, Indonesia, Malaysia, Singapore and Thailand), which look towards a multipolar Asia within a multi-polar world. The Belt and Road Initiative (BRI) appears to be China's economic strategy to achieve its Dream – a debt-trap strategy, to entrap

states to gain geo-political and geo-strategic space. However, there is a concerted push back by affected nations against such predatory mercantilism by China, especially after it arm-twisted Sri Lanka to gain control of the Hambantotta port. Coupled with the trade war with USA, these events have forced China to re-evaluate its future regional and global strategy.

Western scholars have long opined that there is no such thing as a united Asia as it is not a cohesive entity. They consider the term 'Asian Century' as a journalistic hype since there is a distinct lack of unity and commonality within the continent. It should be noted that so too was Europe and it was devastated by internecine wars for centuries. It took two World Wars on the continent and a threat to their democracy from communism that led to cohesion and unity amongst most of its nations, in a step-by-step approach over many decades to establish the European Union (EU).

Asia too can unite in a similar manner to face the common threat of economic deprivation, neo-economic colonialism and consequent instability. Cohesion and unity would emerge from the desire to present a common front to effectively counter the threats to sovereignty and neo- economic colonisation.

The extant geo-economic and geo-political flux provides a window of opportunity for the rising / emerging / developed nations of Asia to come together and enunciate an overarching regional economic and security strategy that would work towards fructifying the Asian Century in a phased manner.

The Options for Realising the Asian Century

These eight rising / emerging / developed nations need to arrive at ways to achieve a new *modus vivendi* entailing consensus, cooperation and building strategic trust. The need is to move away from 'compete & contest' towards an *entente cordiale* leading to greater harmony and cooperation within the region. Considering that there is marked instability in the West Asia and a degree of uncertainty over Central Asia, the first focus for achieving a Regional Multilateral Economic and Security Architecture (subsuming requisite extant architectures) could limit its scope to South (less Pakistan), South East and East Asia – an Indo-Pacific Regional Forum.

Apart from the historical baggage and colonial legacies, countries do have convergences and divergences based on respective national interests. These exist within the regional and global perspectives. However, with the globalisation and economic interdependence, there would be convergences and divergences even on internal policies of nations, as it impacts the other(s) economically (refer Figure 4 below).

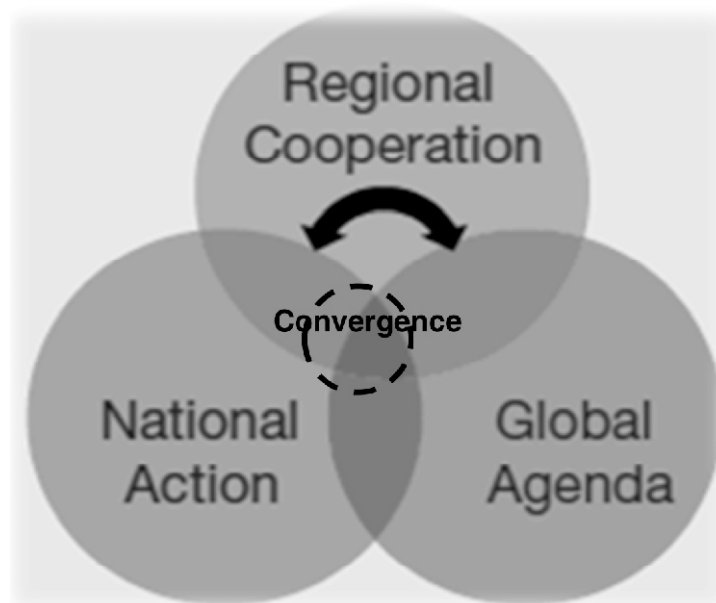


Fig. 4 : Interdependencies leading to Convergences and Divergences

The need is to build on the convergences at the regional level to expand the scope for cooperation at the global level. This would serve to mitigate the divergences and strengthen regional multilateralism thereby facilitating the development of the region. It would need a 'phased adaptive' approach to achieve an overarching Asian Economic and Security Architecture. The first step would be to establish an Indo – Pacific Regional Commission (IPRC) with like-minded countries, which should provide a geo-political, geo-economic and geo-commerce model that would facilitate economic activities, security, trade, intelligence exchanges, military capacity building, technology sharing and possible agenda setting for some coordinated diplomatic initiatives. It would be a truly 'win – win' situation for all member countries of the region.

The four guiding principles of the system, to be achieved in the medium to long term in a phased manner, which would facilitate economic growth, stability and peace are:-

- an integrated infrastructure and energy grid to facilitate economic integration;
- a common integrated domestic base for economic, socio-economic and socio-political strength;
- an integrated geo-economic, geo-political and geo-strategic balance;
- the basis should not be just for countering any country's rise but for stability and prosperity, only then would it be self-sustaining and long lasting.

It would lead to cohesion within Asia, act as succour to the smaller nations and ensure that rule of international law, good governance, equality, transparency and economic prosperity for all is ensured within the region. It could then undergo metamorphosis from a Regional Commission into an Asian Union – a structure that would be able to ensure the actualisation of the Asian Century. Such an organisation would be able to ensure stability, peace and prosperity within the region.

Speaking at the SCO Summit at Qingdao in June 2018, PM Narendra Modi had not only sought increased economic links and integration among the Shanghai Cooperation Organisation (SCO) security bloc but also underlined the need for respect for sovereignty and transparency in connectivity projects among the members of the grouping. He further outlined his vision for a “secure” region with six pillars, where he said “S” stood for security for citizens, “E” for economic development, “C” for connectivity in the region, “U” for unity, “R” for respect of sovereignty and integrity and “E” for environment protection⁸.

Expanding on the same and transplanting it for the IPRC, there is a need for a seventh pillar - the regional commission. Thus the seven pillars would be,

- S – Security for the Citizens;
- E – Economic Development (Sustainable) for all;
- C – Connecting the Region;

- U – Unite People to Work as one Entity- Asians;
- R – Respect for Sovereignty and Integrity;
- E – Environment Protection;
- M – Multilateral Regional Economic and Security Architecture – IPRC.

In order to achieve the Asian Century, the first step would be to form an IPRC, covering East Asia, South East Asia and South Asia (less Pakistan), given the issues in Pakistan, the Middle East and Central Asia. The next step would be to gradually convert this forum into a Multilateral Regional Economic and Security Architecture, based on the four guiding principles enunciated above. After this architecture stabilises, it would lead to an Asian Union, which would aim to bring maximum Asian nations under the umbrella for mutual benefit. Towards this vision, three scenarios emerge for realising the first step of establishing an IPRC,

- **Scenario – I.** A United Indo-Pacific;
- **Scenario – II.** A Bipolar Indo-Pacific; and
- **Scenario – III.** A Divided Indo-Pacific.

Scenario – I: A United Indo-Pacific. While ideally this is the best case but the elephant in the room impeding such a scenario is China. Having enunciated the China Dream and its desire to topple USA as the leading power of the world, it would need a major recalibration of its strategy, which appears unlikely at the moment. The Belt and Road Initiative (BRI) is part of its strategy to gain sole dominance over Asia, initially, and then the World. It has been enshrined in its constitution in March this year, and is seen as the panacea to achieving national rejuvenation. However, the push back by many nations to renegotiate the economic model for implementing the BRI projects and avoid getting into a debt trap, coupled with the US trade war has caused China to pause and review its strategy. Despite this setback, it appears unlikely that China under Xi Jinping would shelve its grandiose plans in the near to medium term. Concurrently, there would be restrictions faced by the IPRC from the West and USA to ensure retention of markets for their products, for which a modus vivendi would need to be chalked out.

Scenario – II: A Bipolar Indo-Pacific. This scenario appears to be more likely at present, wherein most of the other seven like-minded emerging / developed nations coming together to establish the Commission. China would use its revamped BRI strategy to firmly entrench itself in some countries of the region thereby creating a bipolar Indo-Pacific. It would not be an ideal situation, but would be manageable as it would provide the Asian states with an alternate narrative to the BRI model to choose from. There could be a possibility of some *modus vivendi* between these two blocs to achieve an *entente cordiale*. It would enable adequate sustainable development of the region, especially of the countries that would opt to be part of the Commission. This could be more acceptable to the USA and the West as it would assist their pivot to the East.

Scenario – III: A Divided Indo-Pacific. Should the countries of the region go bilateral and hedge between USA and China; then Indo-Pacific would stay divided. This would result in an environment of compete and contest that would be detrimental to the region as a whole. While the rising / emerging / developed countries would be able to manage some semblance of sustainable growth, the chances of contest evolving into conflict would be just a flashpoint away. Should it occur, Asia will descend into economic and political chaos.

Scenario – II appears to be the most achievable and likely development in the present geo-strategic milieu. It would, however need deft balancing of the core interests of not just the individual states, but also of the external powers – especially USA and the EU. Concurrently, there would be a need to balance the interests of China to arrive at the necessary *modus vivendi* for an *entente cordiale*, thereby avoiding the contest from descending onto outright conflict.

Conclusion

Asia is on the cusp of transformation in the geo-economic, geo-political and geo-strategic spheres on the global stage. The Indo-Pacific Region is witness to a gradual shift in the maritime trade centre of gravity towards it from the Atlantic and the Pacific regions. This has resulted in a major geo-political and geo-strategic flux in these regions, thereby providing Asia with a unique opportunity to achieve the Asian Century. For this the rising, emerging and

developed nations of Asia, viz., China, Japan, India, South Korea, Thailand, Malaysia, Indonesia and Singapore (to name a few), need to come together, shed their historical and colonial baggage and contribute for the larger good of Asia, rather than limit their vision to their own growth at the expense of the rest.

However, there are challenges due to internal, sub-regional, regional and external fault lines and fissures amongst nations – a legacy of the colonial past and historical baggage. Coupled with this are the economic, political, socio-religious fissures and the infrastructure and energy voids that appear to restrict and restrain the rise of Asia. These challenges can be mitigated or resolved in a step-by-step approach and the eight rising / emerging / developed nations of Asia need to take the lead to show the way. They need to build on the convergences at the regional level to expand the scope for cooperation at the global level. This would serve to mitigate the divergences and strengthen regional multilateralism thereby facilitating the development of the region.

The first phase would be to establish an IPRC that act as succour to the smaller nations and ensure that rule of international law, good governance, equality, transparency and economic prosperity for all is ensured within the region. It could then metamorphosis from a Regional Commission into an Asian Union – a structure that would be able to ensure the actualisation of the Asian Century. Such an organisation would be able to ensure stability, peace and prosperity within the region.

The extant geo-economic and geo-political flux does provide a window of opportunity to commence the process for achieving the Asian Century in a phased manner by establishing an IPRC. Ideally the scenario of a united Indo-Pacific would be the best for the region. However, it seems more likely that a bipolar Asia could emerge in extant geo-strategic environment, wherein most of the other seven like-minded emerging / developed nations coming together to establish the Commission. While China would use its revamped BRI strategy to firmly entrench itself in some countries of the region. It would not be an ideal situation, but would be manageable as it would provide the Asian states with an alternate narrative to the BRI model to choose from. There could be a possibility of some *modus vivendi* between these two blocs to achieve an *entente cordiale*. It would enable adequate sustainable

development of the region, especially of the countries that would opt to be part of the Commission.

However, the economics and social cost of missing this opportunity to achieve the Asian Century in a phased manner are staggering as it would render an Asia that is unstable and ridden with conflicts.

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Nepal — A Paradise Between a Rock and a Hard Place

Lieutenant General Ghanshyam Singh Katoch,
PVSM, AVSM, VSM®

Abstract

This article looks at Nepal's Buffer State predicament and the path that India and Nepal must follow to meet the national interests of both countries. The rise of Nepalese nationalism with a communist complexion and the rise of China, which seeks to expand its sphere of influence, have led to Nepal being pushed into what can be called as the "New Small Game". China's growing profile in the Himalayan country is a threat to India's security interests and India has to be proactive to maintain the buffer status of Nepal. The Nepalese economic situation and sovereignty issues have motivated Nepal to seek help from China for meeting its infrastructural and transportation needs. However, the geographical advantage that India provides to Nepal for land transportation access can still not be matched by China which will affect Nepal's strategic calculations. The demand for modification to the Indo-Nepal Treaty of 1950 is fallout of assertion of sovereignty and an unreal threat of being swamped by Indian immigrants. So far, the Nepalese have demonstrated remarkable understanding and good diplomatic skills to balance between two antagonistic neighbours. However, the planned Chinese land road/rail connectivity across the Himalayas increases India's insecurity as it dilutes the buffer status. India cannot stop Nepal from seeking Chinese assistance. On its part Nepal has to balance its needs with the advantages of a neutral buffer. Perhaps with strict neutrality Nepal can become for the subcontinent what Switzerland was for Europe. India must help Nepal to achieve this and remain an effective buffer.

®Lieutenant General GS Katoch, PVSM, AVSM, VSM (Retd) is a Distinguished Fellow at the USI.

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“The term buffer zone, common in strategic discourse, is distinct from the broader, more generic term borderlands, which is commonly used in the historical literature on economic, cultural, and ethnic intermingling that spills across the borders of civilisations, empires, or states”.¹

The reality of the Indian subcontinent’s political geography makes Nepal a buffer state between India and China. A Buffer State is a country that provides a cushion to two rival hostile powers, and in the process must be prepared to be buffeted by them. Buffer states are desired by rival powers to give them strategic depth and a sense of security; especially by the lesser of the two powers. But being a buffer means that the risk of being squeezed between two antagonists is omnipresent. Many buffers have been rudely buffeted (Belgium and Poland in the World wars; Afghanistan in the ‘Great Game’). Others have gained by being strictly neutral and managing to gain from both sides to a conflict (Switzerland and Sweden in both World Wars). This article looks at Nepal’s buffer status predicament and crystal gazes the path that India and Nepal must follow to meet the national interests of both countries.

Nepal’s historic interaction with both China and India goes far back in history. With India the relations exist from pre-recorded historical times, evident from the common religious traditions and mythology, while the first recorded official relation between Nepal and China date from the 5th century AD.² India has cultural linkages with all Nepalese religious, caste and ethnic groups. Its cultural relationships are not confined to only *Hindi/ Awadhi/ Bhojpuri* speaking population of Nepal or any geographical region but are spread all over. For long inter-marriages of the ruling classes in Indian kingdoms with the ruling classes in Nepal took place. Hence, we had the ruling families of, say, Gwalior (Mahadav Rao Scindia) or J&K (Karan Singh) married into the Rana family of Nepal. The trend continued after Indian independence and even after abolition of Princely States, as it was a result of a common cultural heritage. Marriages between the former princely families of Rajasthan and Nepal are also common because the Shahs who ruled the Gurkha kingdom from 1559 and thereafter a unified Nepal—trace their ancestry from the Rajput Hindu community from Rajasthan. The common Nepalese people also inter-married in India as relationships were forged because of having employment there,

as also through alliances with the large Gurkha community in India who are descendants of retirees of the British Indian army. Such strong intangible relations add to the tangible economic links and make Nepalese stakes in India very high.

The rise of Nepalese nationalism with a communist complexion and the rise of China, which seeks to expand its sphere of influence, have led to Nepal being pushed into what can be called as the “New Small Game”. As China makes inroads into the Indo-Nepal equation; it seeks to achieve strategically driven and economically manifested interests. The situation for Nepal is quite akin to that which Afghanistan has had to contend with all through. Afghanistan was a buffer between the British and Russian empires but was dependent on the British Empire due to convenient transport linkages to the outside world. So is the case of Nepal which is more dependent on India for access to the sea for trading purposes. Even present-day Afghanistan has to juggle between Pakistan and Iran for access to the sea, in the manner that Nepal is trying to do between India and China. However, in Nepal’s case there are greater physical barriers in terms of terrain and distance while Afghanistan’s barriers are geo-political which can change with changing inter-state relations.

Fortunately for Nepal unlike the British and Russian “Great Game”—which still continues to haunt Afghanistan—this game will be mostly a tug of war to pull Nepal to either side by offering means of achieving higher standards of living and prosperity. Since India is the lesser power, Nepal’s buffer status is more important for it. Hence, China’s growing profile in the Himalayan country is a threat to India’s security interests and India has to be proactive to maintain the buffer status of Nepal. Beijing has been drawing Nepal into its sphere of influence by increasing its political, economic, and cultural links with Kathmandu. On the other hand, till late, India’s regional hubris made it take Nepalese friendship for granted which is undermining India’s efforts.

The April 2015 Nepal earthquake was a major blow to the Nepalese economy and people. India’s relief and rescue reaction by virtue of its geographical accessibility and near familial status was spontaneous and the quickest. Sadly, the gains made in the hearts of the Nepalese people and government were as quickly nullified by the coverage of an “insensitive and jingoistic” Indian

media.³ Their reporting tom-tommed the Indian response for the Nepalese people, painting the Nepalese Army and government's efforts in poor light even though they were much larger in scope. This added to the present awkwardness in the Nepalese and Indian relations.

While Nepal was recovering from the ravages of the earthquake, in 2018, the situation again deteriorated due to natural calamities like floods, increase in lending rates, slow recovery of exports and above all the decline in the movement of labour to other countries, thus affecting remittances. There is a downward trend in remittances as the outflow of migrant work force has stagnated over the years.⁴ To a large extent this is due to slowdown in the Middle East and new policies in countries like Malaysia. This has motivated the Nepalese to look for alternate benefactors for meeting the infrastructural needs of the country. The most obvious being China.

The Nepalese strategic culture is ideally suited for their present predicament. Prior to the 17th century their martial outlook made them expand their kingdom upto Kangra (in present day Himachal Pradesh) in the North-West and Sikkim in the South-East. But as the Nepalese came into contact with British India, conflict ensued. In the Anglo-Nepalese war of 1814–16 Nepal lost its conquered territories in both the West (Garhwal/Kumaon region) and the East (Sikkim). Thereafter Nepal had to walk the tight rope between British India and China to retain its independence. This was done skilfully—including by assisting the British in the 1857 Indian War of Independence. The performance of the Gurkha troops so impressed the British that their inclusion in the British Indian Army is a lasting legacy in the British and Indian armies till today. This contact with the British gave the Nepalese the quality of skilfully appeasing while retaining dissuasive deterrence for preserving their nation.

The geographical advantage that India provides to Nepal for land transportation access can still not be matched by China, hence dependence on India will always affect Nepal's strategic calculations. Enhanced education and globalisation which permitted Nepalese to travel far and wide for employment brought back ideas which fostered democracy, and when the monarchy stifled it, Communism. The main people to people linkages between

India and Nepal that existed earlier were either through the feudal top strata or the lower classes including the Madhesis. These are reducing with the growth of the middle class which has a greater awareness and sensitivity to nationalism. The Constitution of Nepal 2015, building on the interim constitution of 2007, transformed Nepal into a republican state from a constitutional monarchy, a federal democracy from a unitary system and gave it a secular structure from a Hindu character. It also brought in changes in the citizenship laws. Whereas earlier the children of a Nepalese and Non-Nepalese couple were granted Nepalese citizenship, that is not the case now. In the new constitution both parents have to be Nepali for their children to get Nepalese citizenship.⁵ This has been brought in because of the fear that marriages between Indians and Nepalese will swamp the Nepalese identity with overpowering Indian influence in Nepal.

The monarchical Nepali state had been exclusionary and unaccountable but provided greater cohesiveness in the Nepalese state which had been integrated by the Shah dynasty. The present political instability has prevented a substitute for the cohesion provided by the monarchy earlier. Resultantly, nationalism and perceived affronts to Nepal's sovereignty especially by India are used as unifying catalysts. The demand for modification to the Indo-Nepal Treaty of 1950 is a fallout of such anger and an unreal threat of being swamped by Indian immigrants. Far more Nepalese come and work in India on account of the 1950 treaty provisions than the numbers of Indians who work in Nepal.

Following the formal introduction of multi-party democracy in 1990, banned and underground political party leaders emerged to take control of state power with the monarchy side-lined. A democratic setup made interaction at the government to government level with India—also a democracy—more conducive. However, just as the new democratic institutions were finding their feet, they began to be weakened by emerging political party dynamics. Presently, the situation has stabilised with the Left Alliance. But the Left alliance also brings in better interaction with Communist China because of ideological convergence. The capability of the government to provide jobs being weak and because of other societal requirements, the void has often been filled up by foreign governments and NGOs by and large from US and Europe. With economies in those areas going down and in recent times

concentrating more on problems in their vicinity (Bosnia, Ukraine, migration from Africa and Syrian/ Iraqi refugees)— aid from US and Europe has reduced. The only countries with deep pockets to which Nepal can appeal for aid are China and India. China of course has far deeper pockets and its BRI initiative is perceived by Nepal as beneficial to it.

India needs to exploit its better connectivity and cultural linkages for keeping its relations with Nepal on a sound footing. Good relations with India can assist Nepal to overcome its weaknesses of shortage of petroleum products and poor utilisation of hydel resources. India can assist Nepal in overcoming its other weakness like shortage of technical and vocational institutes, declining remittances from abroad, and staggered economic growth. Better relations with India would also mitigate the perceived threat of political interference by India in the Terai region.

Contrary to Indian perceptions—shaped by greater interaction with the poorer Nepalese who seek jobs in India or join the Indian army— the Nepalese have demonstrated remarkable understanding and good diplomatic skills. It is no mean feat for a buffer state to balance between two antagonistic neighbours— which Nepal has done— and maintain fairly good relations with both of them. This reflects on the maturity of Nepalese diplomats. These skills need to be carefully managed keeping in view the sensitivities of both its neighbours while enjoying optimal gains from them. Nepal has enjoyed open borders with India with freedom for her people to visit India without restriction and even take up employment in India. This unique system needs to be leveraged to ensure better relations with India. India as an emerging regional power has to ensure that its immediate neighbours do not feel threatened by it. Rather they should feel securer. The Indian response at Doklam to safeguard Bhutanese sovereignty was an unavoidable response to maintain Bhutanese confidence in India and the regional status quo with respect to Bhutan. The planned Chinese land road/rail connectivity across the Himalayas erodes the real and psychological status of the Himalayas being a natural barrier protecting India and increases India's insecurity as it dilutes the buffer status and opens an access to the Indian heartland to a hostile competitor. Though appearing a distant unrealistic scenario, India has to plan for future confrontations with China in the Central Sector in case Nepal swings too close to the Chinese camp.

It is an undeniable truth that an impoverished Nepal can hope to gain more in infrastructure development from a cash rich China. We should see what we perceive as a tilt towards China, as a legitimate means to get the infrastructure that Nepal direly needs. India cannot stop Nepal from seeking Chinese assistance as it tried to do through a formal 15-month blockade in 1988 when Nepal had purchased arms from China, contrary to the 1950 treaty. That action did more to undermine Nepalese trust in India than anything else. Sovereignty anywhere is a sensitive issue and India must not let the Indo-Nepal relations to become strained on the issues of Nepal's Constitution-making or Madhesi politics which are its internal issues.

Permitting foreign nationals to serve in a country's armed forces without the caveat to assume citizenship is the ultimate level of good relations between two countries. This is what the Nepalese can do in the Indian Armed Forces by virtue of tradition and the 1950 treaty. The mercenary nature of this activity has been sanctified by the International Commission of the Red Cross (ICRC) which terms Nepalese in the Indian and British army as combatants.⁶ A waiver that is granted to only the French Foreign Legion by the ICRC besides to the Gurkhas. We must ensure that our involvement must be focussed to keep our relations cemented and in line with our long term security interest, which is to maintain the buffer status of Nepal. India must never treat Nepal like a protectorate. On its part Nepal has to balance its needs with the advantages of a neutral buffer. Switzerland and Nepal are alike. Both are landlocked and mountainous. Both have four main cultural regions—German, French, Italian and Romanch in Switerland and Madhesis⁷, Gurkha, Paharis (Chhetri/Brahmins) and Tibeto-Nepalese (Bhutia/Sherpa/Lepcha) in Nepal. Both have tremendous tourism potential. The only difference is that in the case of Switzerland it is developed and in the case of Nepal it is waiting to be developed. Perhaps with strict neutrality Nepal can become for the subcontinent what Switzerland was for Europe; a place where countries with disputes could meet, talk and usher peace. What India must strive for is to economically integrate Nepal in the Indian trade and transportation system so that Nepal can get more prosperous. A prosperous Nepal will be able to develop its tourism potential and truly become a Switzerland of the East. At the moment Chinese infrastructure development in Nepal has not really started

though many promises have been made. This presents India with a brief window of opportunity to reset its relations with Nepal—before China does its course corrections— and enable it to remain a neutral buffer state that prospers.

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⁶ For details see ICRC, IHL database, "*Practice Relating to Rule 108. Mercenaries*", at https://ihl-databases.icrc.org/customary-ihl/eng/docs/v2_rul_rule108

⁷ Nepalese who racially and culturally are akin to people in the neighbouring Indian States of Uttar Pradesh and Bihar, of Indian origin living in the *Terai*, a plains belt bordering India.

The Belt and Road Initiative of China: Security Implications for India and the Indo Pacific Region and Response Strategies*

Captain T Sugreev, IN®

“The ancient Silk Road thrived in times of peace but lost vigour in times of war”

- President Xi Jinping

Etymology of the Belt and Road Initiative

President Xi Jinping in his inaugural address at the Belt and Road Forum said, “Peaches and plums do not speak ... they are so attractive that a path is formed below the trees”. He was, with deep conviction, eulogising and marketing the Belt and Road Initiative (BRI).ⁱⁱ With the possibility of connecting 65 countries, representing 55 per cent of world’s Gross National Product, 70 per cent of population and 75 per cent of energy resources, *Yidai Yilo*, in Chinese, or the BRI is one of the top priorities of Xi Jinping’s leadership.ⁱⁱⁱ The substantial diplomatic, financial and intellectual resources being poured into the initiative make it, unarguably, the most defining economic and political constructs of the 21st century.^{iv} One doesn’t need to scurry to identify pertinent literary sources to research a topic such as the BRI as most libraries and the Internet are surfeit with writings, commentaries and analyses leading eventually to deciphering the underlying, enigmatic Chinese intent. Even so, it is instructive to list down some judgments of academia who have commented on the BRI :-

- (a) A geo-political and diplomatic offensive.^v
- (b) ... grandiose yet stilted ... a challenge to the normative notion of the Indian Ocean Region (IOR) being India’s backyard a distinct military intent.^{vi}
- (c) ... not a security alliance, not a treaty based system not an idea to extend Chinese hegemony.^{vii}

*This is edited text of the essay which won the First Prize in USI Gold Medal Essay Competition 2018 in Group 'A'.

©Capt T Sugreev, IN is Directing Staff at Defence Services Staff College Wellington in the Naval Wing.

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- (d) ... an economic disguise to the String of Pearls theory.^{viii}
- (e) ... a counter to the United States' Pivot to Asia strategy.^{ix}
- (f) ... not a direct challenge to the existing international order but an alternative centred on China ... a response to the Trans Pacific Partnership.^x
- (g) ... OBOR will change the way man has known to work—will change the maritime geography of Asia and the geopolitics of Indo-Pacific.^{xii}
- (h) ... China's Marshall Plan.^{xii}

Some of these judgments are questionably alarming in nature while some circumspectly highlight the benign nature of the BRI. However, what is indisputable is that if and when the BRI comes to fruition, it will be a Goliath sized disrupter that would have significant impact on the countries involved, more importantly on South Asia and the Indo-Pacific Region (IPR).

BRI Through the Chinese Lens

In the BRI Forum speech and in the Vision and Actions document (hereinafter called Vision Document).^{xiii} the phrases that dominate the narrative are win-win cooperation, openness and inclusiveness, inter-governmental coordination, connectivity of infrastructure and opening bottlenecks, unimpeded trade, financial connectivity and integration, and people to people bond. There are but many underlying compulsions on China to conceive a project such as the BRI. Some obvious ones are:-

- (a) China needs to create about 2.3 million jobs by 2020 to replace those lost due to closing of coal mines, a consequence of growing environmental concerns.^{xiv}
- (b) In East and South China, low cost manufacturing such as textiles, garments and low-end domestic goods have become unviable due to rising affluence standards. China needs to identify relatively less developed areas, particularly its western hinterland, to relocate these industries.
- (c) China is beset by excess industrial capacity and foreign exchange reserves. The BRI is an ideal avenue to explore new markets, secure return on investments and safeguard

economic growth while the country makes a quick transition from a low value export model to a model based on domestic consumption and technologically intensive exports. The BRI would also aid in financial integration of the Yuan in order to increase China's heft in the International Monetary Fund (IMF).^{xv}

ARCHITECTURE OF THE BRI AND ITS CONSTITUENT PROJECTS

The BRI aims to connect the young, vibrant East Asian economies to the mature European economies. The two essential components of the project are the land based Silk Road Economic Belt (SREB) and the sea based 21st Century Maritime Silk Road (MSR).

The Silk Road Economic Belt

The 'Belt'. The SREB is a 14,800 km network of high speed road and rail transportation, energy pipelines, fibre optics, industrial parks and smart cities stretching from Xian in central China to Venice in Italy. The Belt connects 4.4 billion people and represents US \$ 21 trillion in economic output.^{xvi} The Belt would go through Central Asia, West Asia, the Middle East, South Asia and Europe. One of the key components of the Belt that is already under full operation is the Chongqing- Duisburg trans Eurasia rail road. A freight train on this 11,200 km rail route takes only 13 days to deliver goods from Chongqing (China) to Duisburg (Germany), a full 30 days less than that taken by a container ship, at one-fifth of the cost. As of now, 25 freight trains travel to and from Chongqing and Duisburg every week. This rail road has had enormous, positive downstream economic effects on the German city and the same could be expected for the other parts of the Eurasian landmass, eventually. ^{xvii}

The Land Based Economic Corridors. The Vision Document outlines SIX economic corridors that comprise the 'Belt'. These are depicted in Figure 1 and are as follows:-

- (a) New Eurasian Land Bridge.
- (b) China- Mongolia- Russia Economic Corridor.
- (c) China-Central Asia- West Asia Economic Corridor.

- (d) China- Indochina Peninsula Economic Corridor.
- (e) China- Pakistan Economic Corridor (CPEC).
- (f) Bangladesh-China-India-Myanmar Economic Corridor (BCrM-EC).

The Belt and Road Initiative: Six Economic Corridors Spanning Asia, Europe and Africa

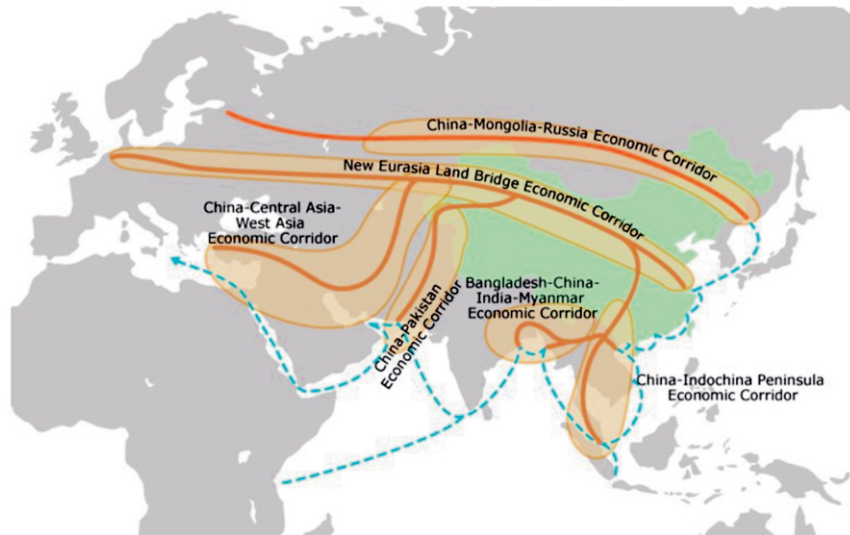


Fig. 1 : Land Based Economic Corridors of BRI

(Source: <http://china-trade-research.hktdc.com/business-news/article/The-Belt-and-Road-Initiative/obor/en/1/1X000000/1XOA36B7.html>, accessed on 25 Jul 2018)

The 21st Century Maritime Silk Road

The 21st Century Maritime Silk Road (MSR) is a maritime initiative that complements the SREB to further Chinese strategic interests. During his speech in the Indonesian parliament in Oct 2013, President Xi Jinping unveiled the contours of MSR. He laid emphasis on economic cooperation, strengthening maritime economy and scientific cooperation.^{xviii} The MSR is depicted in Figure 1 (in blue dotted lines). It spans 50 countries in Asia, Africa, and Europe and would begin in the Fujian province of China and connect Kuala Lumpur (Malaysia), Jakarta (Indonesia), Kolkata (India), Colombo (Sri Lanka), Nairobi (Kenya), Athens (Greece) and finally terminate at Venice (Italy) through the Red Sea and the

Mediterranean. The other arms of the MSR would extend eastwards towards the South Pacific.

How is the BRI Going to be Funded?

The estimates of funding of the BRI are varied. Richardson makes an estimate of \$ 1 trillion of planned investments.^{xix} whereas Crandall et al. make a mention of \$ 8 trillion,^{xx} while Shafei Moiz et al., an astronomical sum of \$ 21.1 trillion!^{xxi} Geethanjali et al. highlight funding by the Chinese Government through issue of special bonds and low cost financing by state run institutions whilst averring that the actual requirement may be several times more than the estimates popularly accepted.^{xxii} Stephen Aris, however, gives a more comprehensive account of the sources of funding the details of which are given in Appendix A. President Xi Jinping, during his speech at the BRI Forum at Beijing on 14 May 2017 made fresh financial commitments to the initiative, a summary of which is placed at Appendix B.

In essence, the financing of the BRI is labyrinthine involving multiple state run financial institutions, primarily the China Development Bank, the China Export-Import Bank, and the China Agricultural Development Bank. It also includes multilateral development institutions like the Asian Infrastructure Investment Bank (AIIB), the BRICS Bank, the World Bank, and multiparty financing schemes like the 16+1 financial holding company. Further, investments by Chinese provincial governments and private companies are also a distinct possibility; however, the bottom line is that the total known funding for the BRI as on date is not even close to sufficient.^{xxiii}

As an aside, consequent to the BRI, the China dominated AIIB and BRICS Bank would provide the world an efficient and financially muscular alternative to the West dominated World Bank, the IMF and the Asian Development Bank (ADB); this may also result in faster internationalisation of the Yuan as a predominant international currency.^{xxiv}

Bringing the BRI to Fruition

The BRI has been written in the Chinese Constitution as the very basis for China's economic growth, so the Chinese leadership will leave no stone unturned to bring the initiative to life. However, implementing the many projects of BRI will be the most challenging

work that the modern world would ever see.^{xxv} by one reckoning, the project would be fully operational only by the year 2049, the centenary of the People's Republic of China.^{xxvi} Some key factors that would dictate the success of BRI are as follows:-

(a) The partner countries will need to work in concert with China with regard to policy support, financial commitments, connectivity of infrastructure and create an enabling environment by removing bottlenecks in transport system, border crossing of goods, customs clearance, and ensure law enforcement.

(b) The partner countries will have to achieve seamless convergence in functional aspects of the initiative like inspection of goods, quarantine, movement of people, verification and accreditation procedures etc. In addition, these countries will have to secure domestic support and build political consensus to promote wider private and public participation.

Execution of the BRI. China has set up an autonomous agency - the State International Development Cooperation Agency (SIDCA) to monitor the BRI. SIDCA will secure foreign funding, plan strategic projects and is answerable to the State Council, China's Cabinet, headed by Premier Li Keqiang, thereby making SIDCA a powerful agency to take the BRI forward. ^{xxvii}

Risks in BRI. The 'Belt' passes through one of the harshest terrains in the world; this coupled with the high cost of investments to be made by the stake holding countries, political instability in some regions, and territorial and maritime disputes of China with its neighbours, make the BRI inherently a risky preposition. The Managing Director of the IMF Christine Lagarde, at a conference in China, warned that the countries signing up for BRI may end up in massive debt traps.^{xxviii} However, the biggest risk to the BRI is the Chinese economy itself.^{xxix} There are indications that the Chinese economy may not sustain its hitherto growth; coupled with the tariff war unleashed by the USA, the ability of the Chinese Government to fund the BRI may substantially diminish in future.^{xxx} Therefore, China and the partner countries will have to weigh these consequences, identify mitigation measures and implement them effectively; this aspect would be the most crucial and challenging part of executing the BRI.

GEO-ECONOMICS, GEO-STRATEGY AND GEO-POLITICS OF BRI

The Geo-economics of Infrastructure. As per the ADB report in February 2017, Asia will require \$ 26 trillion from 2016 to 2030, ie \$ 1.7 trillion investment per year to maintain balanced growth.^{xxxix} China, perhaps, is the only country that has the potential to undertake projects of this magnitude; it is opined that the fates of these Asian countries and China are bound to converge. The BRI will, possibly, increase Chinese penetration in these countries and the latter's dependency on it.

The Geo-economics of Rare Earth Metals. China supplies 95 per cent of world's rare earth metals that constitute most electronic devices. China demonstrated its stranglehold in 2010 when it stopped the supply of these metals to Japan, Europe and USA triggering widespread panic.^{xxxix} China is now focusing on marine resources to source these metals, hence its focus on marine scientific research and renewed maritime interests in the IPR.

So, Is BRI a Military Construct?

On the surface, the BRI seems benign. However; there are many indicators suggesting that it is an attempt to expand China's sphere of influence, for example :-

- (a) China is embroiled in multiple territorial and maritime sovereignty disputes with its neighbours. The BRI would enhance China's strategic depth and leverage over the claimants which include India, Japan, South Korea, Taiwan, Vietnam, Brunei, Malaysia, Indonesia and the Philippines.
- (b) China is extremely wary about its energy security. Its over dependence on the seas for energy could be its Achilles Heel in a conflict scenario. The BRI is depicted in Figure 2; once complete, it would enable China secure control of strategically important choke points which include the Sunda and Malacca straits, the Persian Gulf, the Gulf of Aden, and the Bab al-Mandab strait. It will also consolidate China's influence in the Taiwan Strait. This would, in a large measure, aid its ascendance as a world power.^{xxxix}



Fig. 2 : The Belt and Road Initiative of China

(Source : japan-forward.com/can-china-keep-up-as-southeast-asia-diversifies-ties/ / さしかえ【jf】 m 中国一帯一路・0419/c

(c) The BRI is a grand strategy to integrate China with the rest of Asia and the world's largest land mass - Vladivostok to Lisbon and Moscow to Singapore through an extensive network of economic corridors. It also aims to expand its influence in areas traditionally dominated by India such as the South Asia and the Indian Ocean.^{xxxiv}

(d) The BRI is a non-military catalyst through which China will accelerate the decline of the USA and ensure a more balanced distribution of geo-political influence, an issue considered vitally important to the Chinese leadership.^{xxxv}

China is well on its way to building more than 18 overseas naval military bases in the IOR and western pacific, the details of which are enumerated in Appendix C. In order to protect its interests and secure energy sources, the IOR, particularly, has witnessed increased forays by Chinese naval ships and submarines in recent years. Countries such as Djibouti, Pakistan, Sri Lanka, Bangladesh, Myanmar, and Maldives give vent to the Chinese naval strategy in the IOR. Joint military exercises, supply of military hardware,

financial assistance, development of strategic ports, port visits by naval ships and submarines are verily military in nature though its effects on the security of the region are often downplayed by China.

China has been routinely challenging international rules and norms more than ever before; rejection of the Permanent Court of Arbitration ruling dated 12 July 2016 involving the Philippines and China regarding historic rights and maritime entitlements in the South China Sea (SCS), construction of artificial islands in the SCS that may lead to aggravation of disputes between maritime nations, articulation of a shift in its strategy from 'off shore water defence' to 'off shore water defence with open sea protection', reorganisation of its military into theatre commands, impetus on strategic forces like the Rocket Force and SSBNs, and a massive expansion of the PLA Navy and Marine Corps when juxtaposed with the BRI underscore the conspicuous contradictions between Chinese actions and their intentions. This could be the sole cause of widespread trust deficit and scepticism about the BRI and the CPEC.

It is geo-economics that is the nub of Chinese aspirations in the IPR which is driving China's geo-strategy and geo-politics in most continents and many countries. There is a distinct military hue to the BRI that can potentially render enormous advantages to China in exercising strategic squeeze and constricting the geo-strategic-political-economic space of countries in Asia, Europe, Africa and the IPR, for flag has usually followed trade in history.^{xxxvi}

BRI in the Geostrategic Backdrop of the Heartland and the Rimland

Theories

In his seminal book 'The Geographical Pivot of History', Mackinder in 1904 proposed the Heartland Theory. The Heartland of the earth's surface lay at the centre of the World Island ie the land mass connecting Europe, Asia and Africa. Later in 1919, he theorised that "... who rules the World Island commands the world".^{xxxvii}

In 1942, Spykman postulated the Rimland Theory. He described Rimland as the maritime fringes of the Eurasian Continent

ie its western, southern and eastern edges. In strict geostrategic terms, the Rimland Theory is an antithesis to the Heartland Theory. In fact, Spykman goes further and criticises Mackinder for overrating the importance of the Heartland as being of immense strategic significance and for his excessive land- centric outlook.



Fig. 3 : Mackinder's Heartland and Spykman's Rimland

(Source : www.sutori.com/item/rimland-theory-8cd6 accessed on 16 Jul 2018)

There are striking similarities between the geographies of Figure 2 and Figure 3. The BRI crisscrosses the Heartland and the Rimland many times over; it is, therefore, reasonable to state that China is poised to exercise the immense geo-politico-strategic-economic influence that would accrue, over the world, making the theories seem eminently prophetic! This substantiates the point - the **BRI** is a geo-politico-diplomatic offensive and the most extensive yet veiled military construct of the 21st Century to expand Chinese influence in strategically vital areas of the world.

CHINA-PAKISTAN ECONOMIC CORRIDOR

CPEC and China. A map of the CPEC is depicted in Figure 4. Their 'all weather friendship' aside, for China the geography of the Makran coast is too good to ignore from both strategic and economic stand points. The CPEC is the most important economic corridor and the flagship project of the **BRI** due to the following: -^{xxxviii}

(a) CPEC connects Kashgar in Xinjiang Uygur autonomous region, an underdeveloped, restive region in China to Gwadar thereby giving China access to a deep water port. The port would keep its trade and alternative energy lines from the Middle East intact even if the IOR were to be bottled up by its adversaries in a conflict scenario. Further, Gwadar port cuts transit time of oil from the Persian Gulf to China from 45 to just under 10 days! ^{xxxix}

(b) Gwadar lies at the confluence of the most commercially important regions comprising West Asia, Central Asia and South Asia. Therefore, the economic potential of CPEC is enormous.^{xl} CPEC would give China an ideal launch pad to develop its western region and also cement better ties with southern, central and West Asia.

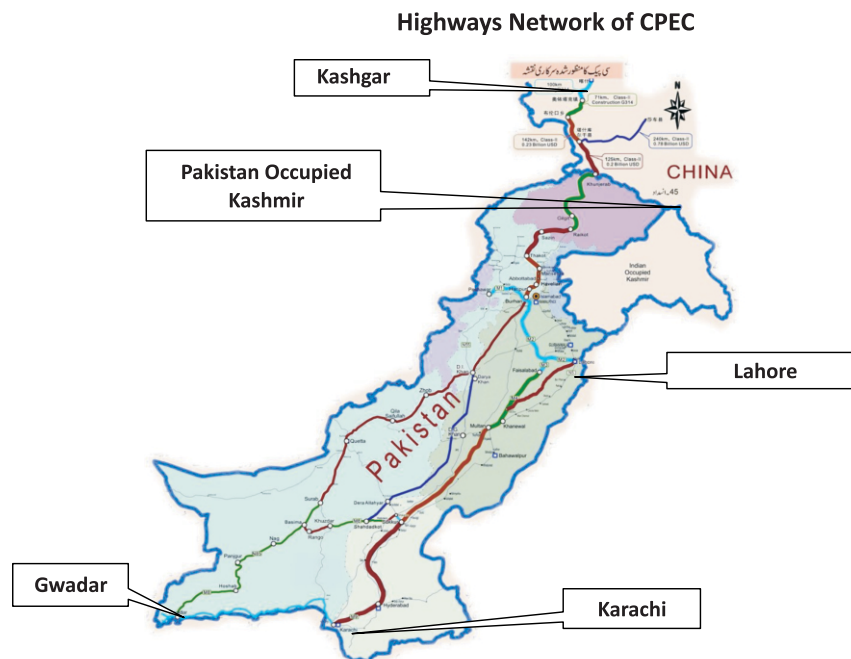


Fig. 4 : The Geographical Extent of CPEC
(Source: www.cpec.gov.pk/maps, accessed on 26 July 2018)

Major Projects Under CPEC. China has made a commitment of \$ 46 billion to undertake various projects under CPEC. This amount has reportedly been increased to \$ 62 billion.^{xli} The broad outlays for these projects are illustrated in Appendix D.

CPEC and Pakistan

Consequences on Pakistan. The future of Pakistan is closely intertwined with the success of CPEC. China is the largest investor in infrastructure in Pakistan and also its largest trading partner. Given Pakistan's chronic energy crisis, poor infrastructure, and consequent low industrial output, the CPEC may give a significant boost to these sectors and bring in prosperity to large parts of the country that continue to have abysmal standards of living, especially Balochistan and Khyber Pakhtunkhwa provinces. Due to its geography vis a vis Asia, Pakistan will likely become a major regional economic hub, perhaps at the expense of India, if and when the CPEC operates at its full potential. Many in Pakistan believe that the CPEC is "not a game changer but a fate changer".^{xlii}

Risks in CPEC. The CPEC represents both possibilities and risks. Pakistan's strained relations with India and Afghanistan, its fragile internal security situation, proliferation of and support to rabid Islamic terrorist groups and its backlash, weak political structures, mistrust in civil-military relations, and a crisis ridden moribund economy make the CPEC an extremely risky project that may result in huge sunk costs for the Chinese.^{xliii} Time is the best judge.

BRI, CPEC AND INDIA'S CONCERNS

India-Pakistan-China relations are complex, scarred with history of wars, unresolved border disputes and fundamentally differing nature of governments. The **BRI** and the CPEC present many possibilities for India. However. They cannot be viewed in isolation as there are many unaddressed concerns.

(a) **Violation of India's Sovereignty.** The CPEC violates Indian territorial integrity as it passes through Pakistan Occupied Kashmir (see Figure 4). The United Nations substantiates India's concerns by highlighting that the CPEC could create geo-political tension between India and Pakistan and ignite political instability in South Asia,^{xliv} even as China dismisses India's concerns.

(b) **Militarisation of India's Neighbourhood.** India's strategic and national interests are closely linked to peace and stability in the IOR. However, her immediate neighbourhood, (Pakistan, Bangladesh and Myanmar), is

witnessing unprecedented militarisation due to Chinese support in the form of military technology, fighter aircraft, warships and submarines (Type 039A-Yuan class). The fact that 70 per cent of China's arms sales are funnelled into these three countries heightens India's security concerns.^{xlv}

(c) **BCIM-EC and North East India.** India is also sensitive to the possible security concerns arising out of linking its restive North East to the Yunnan province of China through the BCIM-EC.

(d) **Blocking of UN Sanctions.** China has demonstrated its duplicitous nature by repeatedly blocking India's attempts to impose UN sanctions on terrorists and terror organisations like Jamaat-Ud-Dawa, Jaish-e-Mohammed and Lashkar-e-Taiba, confirmed to be sponsored by Pakistan.

(e) **Security Challenge to India and Indian Shipping.** The BRI and CPEC will likely lead to increased shipping congestion in the IOR, thereby posing security challenge to India, Indian shipping and complicating its Maritime Domain Awareness.

(f) **Economic Isolation.** The Chinese preponderance in the financial institutions funding the BRI may result in adverse consequences on India's share of global trade, flow of Foreign Direct Investment, allocation of funds for infrastructure projects and may result in its economic isolation.^{xlvi}

RESPONSE STRATEGIES

India's Response and Strategies

Manoj Joshi in his article argues that India must cherry pick the BRI and explore opportunities that can benefit India.^{xlvii} In an official statement on 13 May 2017, the Government of India boycotted the BRI. Such a hard line approach would work to its detriment; due to its strategic location in the IOR and its growing economy. India is a prerequisite for the BRI to succeed,^{xlviii} but the converse is also true. Strategies and responses rooted in pragmatism are, perhaps, the only options available to India. There are several points of convergence that India must cash on, for example :-

(a) India is in dire need of basic infrastructure, more so in its border areas in North and North East, and island territories.

India can draw on China's experience and expertise in executing large scale projects in record time.

(b) Project SAGARMALA unveiled by India in March 2015 aims at accelerating economic development by harnessing the potential of marine resources. Some pertinent facts that highlight the abysmal state of the Indian port and shipping sector vis a vis China are enumerated in Appendix E (most other sectors of infrastructure in India lag in a similar way). The project involves construction of mega ports, modernising existing ports, developing inland waterways, enhancing port connectivity via road, multimodal logistics parks, pipelines and waterways and in turn ensuring coastal community development. The preliminary estimate for the project is a whopping Rs 4 lakh crore.^{xlix} India cannot go it alone, both in funding and execution. It is here that a possibility of convergence with China exists.

(c) India has unveiled a large number of mega initiatives like 'Make in India', Small City Project, 'Skill India', and 'Digital India' to spur manufacturing sector and employment. The Chinese overcapacity in industrial and technological output could be explored to give a fillip to these initiatives.

Whilst cooperation in areas of convergence is most desirable, India, Pakistan and China must work on the areas of concern through discussions and confidence building measures. A recognition of India's security concerns and addressing them, playing by international rules and norms, greater transparency in the terms and conditions of BRI, and last but not the least congruity in Chinese actions and intentions are *sine qua non* for India to be onboard the BRI and CPEC.

India has been a dominant player in South Asia but is gradually ceding its strategic space to China. India will have to reorient her national priorities for 'business as usual' pace just won't work with China. Some strategies to counter the growing Chinese influence are as follows:-

(a) India has many socio-economic compulsions which preclude her participation in any form of a race, be it military or otherwise. A 'tooth for a tooth' approach to respond to the growing Chinese influence will only wear it down. Apart from strengthening its other elements of national power namely

Diplomatic, Information, and Economy, India must work on its 'Hard Power' by focusing on indigenisation, structuring an agile force that is effective across the spectrum of conflict, one that is able to counter the new fang led capabilities that China can throw at it. Long overdue Higher Defence Organisation reforms, restructuring of the armed forces by focusing on 'tooth to tail' ratio, integrated commands and developing infrastructure on island territories and border areas are critical to offset the military asymmetry with China.^{li} India must also secure berthing, crew turn around, and replenishment rights of naval ships and military aircraft in friendly countries in the **IPR** in order to enhance its reach and compress reaction time, should there be a need to deploy these assets.

(b) India must resurrect its influence and stature in its immediate neighbourhood and promote goodwill by deepening diplomatic, economic, cultural and military ties with these countries. India must strengthen existing initiatives like the 'Act East Policy', BIMSTEC, 'Neighbourhood First', 'Go West', Bangladesh-Bhutan-India-Nepal (BBIN), and 'Mausam' to ensure that they yield results in line with national priorities.

(c) India must project itself as a reliable, efficient alternative to China in undertaking development projects, albeit on a much smaller scale, but with greater local participation and stake holding, a model that is in stark contrast to the Chinese 'unfriendliness of purpose'.^{lii} India must mobilise all available resources to ensure that the development projects committed to in neighbouring countries are brought to fruition at the earliest.

(d) Provided its core security concerns are addressed, India must concurrently progress bilateral ties with China and Pakistan, enhance mutual understanding between people so as not to allow the differences to snowball into disputes, and to foster a domestic environment conducive to fulfilling its crucial socio-economic imperatives.

Response Strategies of IPR Countries

As far as the countries in the **IPR** are concerned, they would necessarily have to adopt a 'cooperative security' paradigm.^{liii} be

pragmatic in choosing their strategic partners, modernise and strengthen their militaries, enhance their surveillance capabilities, strengthen existing agreements like the Trans Pacific Partnership, even without US participation, and accept only rules based order in the SCS. Further, these countries must be extremely chary about the SCS Code of Conduct consultations. These consultations which have gathered momentum after the Permanent Court of Arbitration ruling on SCS may legitimise Chinese actions in the sea.

In conclusion, for India, it would be worthwhile emulating Deng Xiaoping's stratagem "*tao guang yang hui*" meaning, hide your brightness, bide your time; in essence, silently working to build capabilities and try to bridge the huge gap vis-à-vis China in all dimensions of national power.

Notes

ⁱ President Xi Jinping's speech at the opening ceremony of the 'Belt and Road Initiative Forum for International Cooperation' at Beijing on 14 May 2017. Full text of the speech available at <http://www.xinhuanet.com/english/2017-05/14/c136282981.html>. Accessed on 30 Jun 2018.

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^{viii} Geethanjali Natarajan and Richa Sekhani, 'China's OBOR - An Indian Perspective'. *The Economic and Political Weekly*, L. No. 49 (December 2015), p.70.

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- ^{xxiv} Geethanjali Natarajan and Richa Sekhani, *op. cit.*, p.68.
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^{xliii} Anneken Tappe, 'Here's Why Pakistan Faces an Economic Crisis, No Matter Who Wins Today's Election', *Market Watch*, 25 July 2018, <https://www.marketwatch.com/story/heres-why-pakistan-faces-an-economic-crisis->

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ⁱⁱⁱ As quoted by Sudarshan Shrikhande in 'Making India's Sea Power Formidable and Future Ready,' *ORF Occassional Paper 152*, April 2018. The author alludes to the secretiveness, the lack of frankness, the duplicity, and the wary suspiciousness of the Chinese.

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Appendix A
(Refers to Page 5)

FUNDING OF THE BELT AND ROAD INITIATIVE

Serial No	Source of Funding	Amount	Remarks
1.	Silk Road Fund	\$ 40 billion	Created expressly for BRI projects. Funded by various Chinese state institutions using currency reserves.
2.	Loans from Chinese State Run Financial Institutions	\$ 80 billion	China Development Bank, China Export-Import Bank, and China Agricultural Development Bank together lent \$ 80 billion for various BRI projects. These would, likely, continue to be the largest source of funding for the BRI in future as well.
3.	BRICS Bank	\$ 100 billion @	Created by BRICS countries with equal vote share to fund infrastructure projects in developing countries.
4.	Asian Infrastructure Investment Bank	\$ 100 billion @	Created as an alternative to the World Bank to fund infrastructural projects in Asia. China contributed \$30 billion. The bank has 37 regional and 20 non - regional members. The point to note here is that Switzerland, Germany, France and UK are among some non-regional members who have joined despite objections of the USA.

@ - total seed capital of the banks; the amount may not be available for BRI projects entirely.

(Source: Aris Stephen, 'One Belt One Road: China's Vision of Connectivity'. *CSS Analyses in Security Policy*, ETH Zurich, September 2016, p.3.)

Appendix B
(Refers to Page 5)

**NEW FUNDING COMMITMENT FOR THE BELT AND ROAD
INITIATIVE BY PRESIDENT XI JINGPING ON 14 MAY 2017**

• Additional support to Silk Road Fund - RMB 100 billion (\$ 14.6 billion)# by China	
<u>Special Lending Scheme by</u>	
• China Development Bank	- RMB 250 billion (\$ 36.6 billion)#
• China Export-Import Bank	- RMB 130 billion (\$ 19 billion) #
• Asian Infrastructure Investment Bank loans for 9 projects of BRI	- \$ 1.7 billion
• Silk Road Fund investments in BRI projects	- \$ 4 billion
• Inauguration of '16+ 1' financial holding company comprising China and 16 countries of Central and Eastern Europe	

- as per exchange rate on 04 Aug 2018.

(Source: President Xi Jinping's speech at the 'Belt and Road Forum for International Cooperation' in Beijing on 14 May 2017. Full text of the speech available at http://www.xinhuanet.com/english/2017-05/14/c_13628298.htm. Accessed on 30 Jun 2018.)

Appendix C
(Refers to Page 8)

**POTENTIAL CHINESE NAVAL MILITARY BASES IN THE INDIAN
OCEAN AND WESTERN PACIFIC REGION**

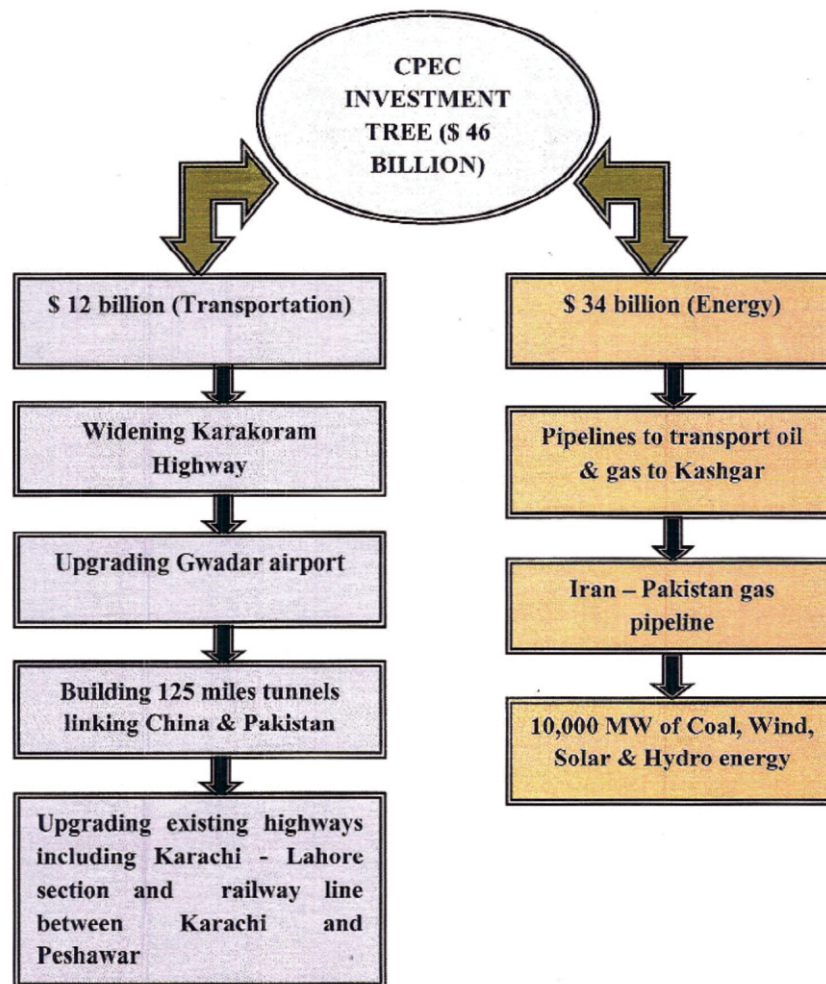
The potential Chinese naval military bases in the IOR and western Pacific are as follows :-

1. Chongjin, North Korea.
2. Port Moresby, Papua New Guinea.
3. Sihanoukville , Combodia.
4. Koh Lanta, Thailand.
5. Sittwe, Myanmar.
6. Dhaka, Bangladesh.
7. Gwadar, Pakistan.
8. Hambantota, Sri Lanka.
9. Maldives.
10. Port Victoria, Seychelles.
11. Djibouti.
12. Yemen.
13. Oman.
14. Lagos Port, Nigeria.
15. Mombasa, Kenya.
16. Dar es-Salaam, Tanzania.
17. Luanda, Angola.
18. Walvis Bay Port, Namibia.
19. Madagascar.
20. Mozambique.

{Source: Monika Chansoria, 'Chinese Naval Presence in the Indian Ocean Region'. *Indian Foreign Affairs Journal* 11, No. 1 (January- March 2016), p.17.}

Appendix D
(Refers to Page 11)

THE CPEC INVESTMENT TREE AND MAJOR PROJECTS



(Source: Irshad, Muhammad Saquib, Qi Xin, and Hamza Arshad. 'One Belt One Road: Does CPEC Benefit Pakistan's Economy?'. *Journal of Economic and Sustainable Development* 6, No. 24 (2015), p. 203.)

Appendix E
(Refers to Page 14)

**COMPARISON OF SHIPPING AND PORT SECTORS OF
INDIA AND CHINA**

SNo	Factor	India	China
1.	Port Capacity Stock (% of GDP)	1	3
2.	Number of Shipyards (that can make more than 120 meter long ships)	7	70
3.	Number of Ports in Global Top 20	0	9
4.	Container Traffic (in million Twenty Foot Equivalent)	11	185
5.	Annual Growth in Container Traffic from 2008-2012 (in million Twenty Foot Equivalent)	0.5	10
6.	Contribution of Waterways in Domestic Transportation (coastal and inland shipping)	<1 %	24 %
7.	Average Turnaround Time of Ships (in Days)	4.5	1

(Source: Ministry of Shipping, Government of India, *SAGARMALA-National Perspective Plan*, April 2016, p. II.)

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India - A Net Provider of Security in Indian Ocean Region (IOR) - A Roadmap*

Major SK Misra®

“India’s location at the very centre of the Indian Ocean has linked us with cultures, shaped our maritime trade routes, and influenced our strategic thought”.¹

-Ms Sushma Swaraj

Introduction

Throughout history, India has been at the centre of the IOR spreading commerce, culture, religion and ideas via the seas. By virtue of geography India is *destined* to be maritime nation and a sea power having open access to the world’s oceans. The IOR also provides India strategic depth from the South much like the Himalayas in the North. However, a changing world order in the past two decades with the rise of China and the relative decline of the United States (US) led global order has upset India’s strategic space in the IOR. India is rapidly losing its manoeuvre space and must reverse this trend in the next decade before China becomes the foremost power in the region. By 2025, India must become a Net Provider of Security in the IOR by leveraging its geographical advantage, and military engagement with littoral states as well as world powers in order to reclaim its position of eminence in the region and secure its maritime interests.

This article lays out the roadmap for India to achieve the goal of becoming a Net Provider of Security in the IOR in six sections. The first section explains India’s interests in the IOR. The second section defines India as a Net Provider of Security in the region. The third section elucidates the role of the armed forces in India’s goal of becoming a Net Provider of Security. The fourth section presents the contours of India’s Defence Diplomacy in this endeavour. The fifth section evaluates the efficacy of a domestic defence industry under the “Make in India” initiative and its relevance for India as a security provider. The last section

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®Major SK Misra is from 25 Madras and is presently posted at Integrated Headquarters of MoD (Army) – MS 2C, MS Branch at New Delhi.

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describes the nuances of capability building for Out of Area Contingencies (OOAC) in the IOR.

India's Interests

Though the IOR is bounded by landmass on three sides, India dominates the region due to its strategic location.² The IOR comprises of 38 littoral states³ and the Indian Ocean, which is the world's third largest ocean.⁴ The Indian subcontinent, Africa, the Arabian and Malay Peninsulas, Indonesia and Australia, bound the IOR with its southern boundary being at 60th parallel south. Within this geography, the Indian Peninsula is the most dominating feature as it projects south allowing maritime access throughout the IOR. India's island territories further accentuate its access in the region. Due to its strategic location, India overlooks strategic Sea Lanes of Communications (SLOCs) in the IOR that link its security and prosperity inextricably to the seas.⁵

India's maritime interests in the IOR involve maritime security and access to the oceans. The country needs to defend an extensive coastline of 7500 kilometres and an Exclusive Economic Zone (EEZ) of a resource-rich 2.4 million square kilometres. Moreover, unhindered access to the oceans for trade is a vital security interest and is essential for national development. 90 per cent of India's trade by volume and 90 per cent of its energy supplies come from seaborne traffic.⁶

The SLOCs in IOR carry almost half of the world's container shipments, one-third of the world's bulk cargo traffic and two-third of the world's oil and energy shipments.⁸ These SLOCs also negotiate several Choke Points in the IOR where they are vulnerable to interference.⁹ Any disruption would have an adverse cascading effect on the world economy and global order. Therefore, the need to secure SLOCs in IOR from traditional and non-traditional threats introduces global vested interests in the region that affect India's maritime security calculus.¹⁰ Adding complexity is the presence of more than half of the world's conflicts¹¹ and 40 per cent of world population within the IOR.¹² Shift of significant economic and military resources of major powers, most noticeably the United States (US), from the *Euro-Atlantic* to the *Indo-Pacific* also underline the global need for security in IOR.¹³

Growing Chinese presence in the IOR has reduced India's influence in the region in the past two decades.¹⁴ In fact, India *was the* security provider before the entry of China. China's actions to secure its SLOCs by increased naval presence and construction of dual-use ports in littoral states have denuded India's preeminence in the IOR that was informally codified as the "Indira Doctrine".¹⁵ This doctrine made smaller littoral states in the IOR a part of India's "sphere of influence" for maritime security. Today, these states are also caught in China's debt-trap giving China greater control over their sovereignty, which could potentially turn them into vassal states. A strengthened Chinese presence in the IOR has reduced India's ability to interdict China's SLOCs, which has traditionally deterred China in case of a confrontation on India's northern borders.¹⁶

Understanding India as a Net Provider of Security in the IOR

*"India has to be a net security provider to island nations in the IOR as most of the major SLOCs are located along our island territories. This bestows on us the ability to be a potent and stabilizing force in the region."*¹⁷

- A. K. Antony

India's interests are best ensured when India is perceived as a Net Provider of Security in the IOR. Countering the influence of China and combatting non-traditional security threats can accomplish this goal. Security assistance from India must again become the primary option for countries looking to secure their interests in IOR. Forming cooperative partnerships across diplomatic, economic, informational and military domains with littoral states will bolster strength in the region. For this, India must leverage its image as a "benign power"¹⁸ while developing requisite military capabilities. To achieve this, India must continue to refine its security-centric role in the IOR. As a Net Provider of Security in the IOR, India would be able to ensure the supremacy of its interests and reestablish itself as the security partner of choice.

India has increased diplomatic, informational and economic engagement with littoral states in the IOR. Initiatives like Security And Growth For All (SAGAR), Sagarmala Project and impetus on strengthening existing multilateral forums like Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation

(BIMSTEC), Association for Southeast Asian Nations (ASEAN) and the Indian Ocean Rim Association (IORA), reflect the importance given to the region in India's "neighbourhood first" policy. Sushma Swaraj, India's External Affairs Minister rightly stated, "Our vision for the IOR is to preserve its organic unity while advancing cooperation."¹⁹

At the national level, the National Security Council (NSC) has the leadership role in achieving synchronization and synergy of all instruments of national power. Working directly under the Prime Minister's Office (PMO), the NSC has the authority in matters concerning national security and must prudently integrate efforts of the Ministry of Defence (MoD) with those of Intelligence Agencies, Ministry of External Affairs and Ministry of Finance. The NSC must also be the driver of convergence of diplomatic, informational and economic initiatives with military actions directed in the IOR.

Role of the Indian Armed Forces

Indian Armed Forces have a role as the security provider in the IOR. The Joint Publication Indian Armed Forces 2017 and India's Maritime Security Strategy 2015 describe India's security interests as seeking constructive engagement and shaping a conducive maritime environment. In this endeavour, the role of the Armed Forces will be defined by threat perception in the region and their ability to achieve synergy of effort at the Service level and with other instruments of national power.

Threats in the IOR

Though India's rivals are traditional threats to India's maritime security, all these nations need a stable IOR. China and Pakistan have a history of aggression against India and their collusion is a major cause for concern.²⁰ Western powers under US leadership also have a heavy presence in the Region. The strategic competition between the US and China in the Region could easily embroil India. Interestingly though, in spite of geopolitical competition in the IOR, lines between cooperation, competition and conflict are blurred.²¹ Since all nations need a stable IOR, they are forced to cooperate through multilateral mechanisms to ensure security of SLOCs.

Non-traditional threats in the region are Maritime Terrorism, Piracy and Armed Robbery at Sea, Unregulated Activities at Sea, and Climate Change and Natural Disasters.²² Maritime terrorism coupled with fundamentalism has emerged as a major threat with reports of Islamic radicalisation in Maldives.²³ Moreover, piracy is a threat to SLOCs that can only be combatted by multinational cooperation. Smuggling and illegal fishing, if left unchecked, have the potential to destabilise economies and ecosystems, respectively. A mix of natural disasters and instability in the littoral states in the Region also necessitate Humanitarian Assistance and Disaster Relief (HADR) and Non-Combat Evacuation Operations (NEO). It is evident that non-traditional threats are rampant in the region necessitating a focused approach in dealing with them.

A Key Imperative: Force Restructuring

The capability of the armed forces to project military power in the IOR is limited and this creates a serious “credibility-gap” for a security provider. The forces lack an expeditionary capability to secure India’s interests against traditional threats in the region beyond immediate self-defence because India’s military focus remains on immediate threats on the land borders. However, developing a capability to operate and project power freely in the IOR is vital to become a net security provider.

Indian Armed Forces need military reforms that make them a “joint” force with synergy in all domains of warfare by exploiting the strengths of each Service. The force restructuring must lead to formation of three joint commands, create a credible amphibious warfare capability and lead to a change in the strategic mindset of armed forces officers.

India needs joint commands on both, the West and East coasts in addition to the Tri-Services Andaman and Nicobar Command. These commands must be capable of executing maritime operations with the Army and Air Force operations in support of the Navy. These commands must comprise of Combined Task Forces with components from all three Services plus the Indian Coast Guard. The creation of three joint commands along India’s maritime boundaries will strongly signal India’s intent in the Region.

Joint commands must have a capability-based representation from all Services. The Indian Army (IA) must provide the amphibious

capability to hold ground and conduct counter terrorist operations on littoral islands. The Indian Air Force (IAF) must provide air defence cover and strategic bombing capability from land-based airfields while Naval carrier based air operations must have the capability to operate away from territorial waters. The sister Services must also provide domain expertise in Electronic Warfare, space and cyberspace operations to assist naval operations. Existing capabilities of the Army and Air Force in the Indian Peninsula need to be integrated under joint commands.

Amphibious Capability to Enable Sea Control

India needs to bolster its amphibious capability to be able to secure choke points and islands along SLOCs in order to be a deterrent against other powers in the Region. This must be under the aegis of joint commands and leverage capabilities of all three Services. An amphibious capability is essential for projecting power away from the home territory and for exercising sea control by establishing hold over distant littoral islands.²⁴

A better amphibious capability is also vital for tackling non-traditional threats. This capability is frequently utilized during HADR, NEO and other Low Intensity Maritime Operations. The Indian Navy and Air Force already have significant sealift and airlift capabilities that need to be synergized for such operations. India has exercised these capabilities periodically to assist littoral countries when required as well as to mitigate sufferings due to natural disasters.

Strategic Mindset of Officers

India's goal to become a security provider will require a change in the strategic mindset of armed forces officers. An obsession with China and Pakistan restricts the officers' worldview in terms of India's strategic space. For this to change, officers must study and understand other countries to expand their perception of India's security interests. This must be done through reforms in Professional Military Education (PME) wherein they pursue "Area Specialization" in IOR countries from the beginning of their careers.

Contours of Defence Diplomacy in India's Context

The MoD defines *Defence Diplomacy* as exchange of high level defence related visits, dialogue on security challenges and port

calls; and *Defence Cooperation* as activities covered by training exchanges, combined exercises, and sourcing, development, production and marketing of defence equipment and other forms of cooperation.²⁵ India's military engagement with littoral states must reinforce their militaries and signal strong bilateral relations and partnerships utilising both diplomacy and cooperation. Increased capacity building and improved security partnerships form important contours of India's defence diplomacy.

Capacity Building

Capacity building of Friendly Foreign Countries (FFC) amongst littoral states is the strength of India's defence diplomacy. Increasing assistance in training, greater military cooperation, cross-attachment of personnel and joint exercises, must augment India's efforts.

Training of personnel from FFC in India is cost effective and the additional numbers of students can be easily accommodated by training institutions in India. In addition, Indian Armed Force's Training Teams must be established in these nations to increase the host nations' capabilities for tackling non-traditional threats. Similarly, increasing military assistance by supplying weapons and equipment to counter non-traditional threats is within Indian capability as these systems are being manufactured in India.

Cross-attachment of Indian Armed Forces officers with host nation forces and vice versa will strengthen India's credibility and trustworthiness. This practice is followed in the North Atlantic Treaty Organization countries and has increased interoperability manifold for them. Moreover, this would result in increased understanding of the region's issues and Maritime Domain Awareness (MDA).

Multilateral engagement with all stakeholders in the region's security through joint exercises must be increased as part of Defence Diplomacy. Apart from the IN, the IA and IAF should also conduct these exercises. Being the largest resident power in the IOR, India regularly conducts large-scale international exercises like Milan, and takes part in numerous others. 16 countries took part in Milan 2018²⁶ and such exercises boost international security cooperation. There is tremendous scope for conducting joint service international exercises that include foreign partners as well as all three Services across the spectrum of military operations in the IOR.

Security Partnerships

Non-traditional threats affect littoral states in the IOR more visibly than traditional threats. This is an opportunity for India to partner with these states and in turn increasing its legitimate presence in the IOR. By forming bilateral as well as multilateral security partnerships with littoral states, India can conduct joint operations to benefit the Region.

India must form Joint Task Forces with the armed forces of littoral states under the aegis of multilateral organisations like the IORA. These Task Forces must follow the structure of the anti-piracy task forces formed in the Gulf of Aden. Having international representation with equity for each nation will enormously benefit India and increase its MDA, while keeping other major powers like China out of the region.

Efficacy of Building Defence Industry under Make In India Initiative

India is the largest arms importer in the world importing 60 per cent of its acquisitions and this dependence is not healthy.²⁷ As a regional security provider, India should not operate weapon systems developed abroad. India pays dearly for these imports whereas ideally, the money spent on acquisitions should be invested in indigenous Research and Development (R&D) and domestic defence industry.²⁸ It is vital to curb imports by building a viable defence industry under the Make In India Initiative and attain the status of a net exporter of arms.

Case For A Strong Domestic Defence Industry

India has access to technology, skilled manpower, infrastructure and private sector participation to develop a strong domestic defence industry. The Indian Space Research Organisation (ISRO) is an example of indigenous development of cutting-edge and dual-use technology that is being leveraged by India's missile programme. Moreover, infrastructure is available with increased private sector participation, foreign collaboration and well-established Defence Public Sector Undertakings (DPSU).

The potential for domestic defence industry has also increased with ease of doing business, improved defence procurement procedures and increased Foreign Direct Investment (FDI).²⁹ These

facts present a strong case for a viable indigenous defence industry in India.

Challenges

Enormous challenges exist for India to become a net-exporter of arms because of lethargic DPSUs, absence of a spirit of innovation and a lack of institutional motivation in the production of arms for the armed forces. In spite of huge investments in DPSUs, the country has not been able to produce a viable domestic defence industry under a socialist model of governance.

Moreover, India spends only US \$ 62 billion on R&D whereas China spends US \$ 372 billion.³⁰ This is a huge gap that needs to be reduced. For this, the DPSUs need to be energized by privatisation of large and unproductive ordnance factories in a phased manner and the resources freed up need to be invested in R&D.

Restructuring The Defence Industry - The Way Forward

The private and public sectors need to share the burden by dividing responsibilities into production for the private sector and R&D for DPSUs.³¹ Co-production through strategic partnership leverages the motivation of the private sector with the infrastructure of the public sector.³² To build its own advanced defence systems, large-scale indigenous innovation in defence technology would be required. While small companies can innovate, they typically do not have access to funds for setting up large-scale production plant. Therefore, for now, the government should offer to produce advance weapon systems indigenously developed in India.

In order to enable indigenous innovation, the model of the United States Defence Advanced Research Projects Agency (DARPA) must be studied. DARPA is responsible for development of emerging technologies for use by the United States military. It accomplishes this goal, in part, by funding research projects in organisations of all sizes - from startups, universities, to large multinationals. Its most visible technological success is the Internet itself.

India must enable its vast technologically skilled workforce access to funds for innovation in defence technology. An Indian organisation on the lines of DARPA could fund and coordinate

indigenous innovation in the defence industry across startups, government institutions, and large corporations.

The armed forces also need to take a lead in indigenisation and must play a bigger role. The IN has led the way by establishing the Naval Design Bureau (NDB) for an in-house design capability and does not have to depend on DPSUs for R&D.³³ Moreover, naval shipyards are headed by serving naval officers. From inception, the Navy retains full control over all activities and is able to produce much better results.³⁴ The other two Services must also follow suit. The army has recently established the Army Design Bureau (ADB) and must emphasise on its success.³⁵

Capacity Building for OOAC

OOAC are military missions conducted beyond India's borders to include humanitarian assistance and military assistance either sought by friendly nations or offered by India in combating security related issues and in disaster relief. The contingencies also cover protection of India's national interests and diaspora.³⁶

In the Indian context, OOAC operations can be broadly classified into Peacekeeping operations, HADR operations and Military operations. Peacekeeping operations can be under the United Nations. HADR can comprise either unilateral or multilateral NEO or disaster relief operations. Military operations too can be under unilateral, bilateral or multilateral arrangements.³⁷

Need for OOAC Capability

India's ability to unilaterally execute OOAC operations to secure its interests will determine its credibility as a net security provider. It is a key measure of a nation's self-confidence, and a non-threatening assertion of its military capability and national will to pursue its interests. This capability is also reassuring for smaller littoral states in the Region. Coupled with a prudent foreign policy, it will discourage outside powers from gaining influence in the garb of aiding nations in distress. Moreover, it reinforces a sense of confidence amongst the Indian diaspora and businesses that are flourishing in the region and are an important source of foreign remittances. Such a capability also ensures the protection of Indian investments in the Region.

Synergy for OOAC

India's capabilities to execute OOAC must be augmented by achieving synergy between various instruments of national power. The execution has often been disjointed as seen during Operations Pawan and Cactus. Not only is synergy required between the Services but also at the NSC and Ministry level to coordinate these operations. In the past decade, India has successfully conducted only NEO operations like operation Raahat in Yemen³⁸ but the country needs to be capable for operations on a much larger scale for a traditional conflict.

At the national level, there is a requirement for structures under the NSC that enable synergy during OOAC. The MoD must establish an OOAC Directorate under the Headquarters Integrated Defence Staff while the MEA must establish an Emergency Division.³⁹ Similarly, the NSC must also ensure the success of information operations and perception management of domestic, host country's and international audiences.

Capacity Building

A credible lift capability is vital for OOAC operations and must be augmented by unity of effort amongst the armed forces. The IN and the IAF are capable of lifting a limited amount of men and material into conflict zones beyond India's boundaries. This must be strengthened by increasing the air and sealift capability of these Services and synergy of existing capabilities through joint structures.

A responsive logistics support system is essential during OOAC and must focus on prepositioned stocks and advanced points for debarkation for air and sealift. Accordingly there is a need for advanced expeditionary bases stocked with prepositioned stores for OOAC. These must be built on the Andaman and Nicobar and Lakshadweep Island chains. India also needs one island on lease from Mauritius or Seychelles in the southern Indian Ocean for this purpose. These bases will increase sustenance for OOAC operations in the IOR manifold.

IA needs amphibious capability to ensure success of OOAC in a scenario when serious resistance is encountered from rival state/non-state actors or natural disasters of unmanageable proportions. This capability is essential in OOAC operations in the

interiors of larger islands that cannot be supported from the sea. In the absence of a Marine Corps, the IA's amphibious capability needs to be doubled with a corresponding increase in dedicated sealift capability.

Conclusion

India must reverse the trend of outside powers like China creeping into the IOR by the middle of the next decade. This is a strategic "window of opportunity" for India as the global order is still in a flux with rebalancing of power between the US and its allies on one side and China and Russia on the other. The IOR is effectively India's "backyard" and must remain so, enabled by an intense and constructive military engagement with littoral states and world powers. In securing its own interests in the region, India also secures the stability of the existing world order, which is crucial for India's growth and development. The most effective way to achieve this desired end state is to become a Net Provider of Security in the Indian Ocean Region.

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Tactical Nuclear Weapons: Myths and Realities

Air Commodore Rippon Gupta®

Introduction

South Asia is the post-Cold War test bed on which nuclear deterrence, nuclear doctrines, command and control systems, and crisis management principles are being examined afresh. Nuclear South Asia has a list of positives to its credit. India and Pakistan have been through a number of serious disagreements and tensions since 1998. Despite grave provocations and serious domestic political pressure, both sides have demonstrated considerable crisis management skills. Military response has not escalated beyond the conventional domains, and has avoided risks of nuclear escalation. Track II discussions between India and Pakistan have probably contributed to clear any misunderstandings. India has published its nuclear doctrine and Pakistan has indicated its thresholds. Both sides have put into place systems to improve safety and security. They have put in place command and control systems at strategic and operational levels.

Strategic Nuclear Weapons

A strategic nuclear weapon refers to a nuclear weapon which is designed to be used on targets as part of a strategic plan, such as nuclear missile bases, military command centres, factories, and heavily populated areas such as cities and towns.

Intercontinental ballistic missiles with nuclear warheads are the primary strategic nuclear weapons. A feature of strategic nuclear weapons is their greater range, thus, giving them the ability to threaten the enemy's command and control centres. They have significantly larger yields, starting from 100 kilotons up to destructive yields in the low megaton range. However, yields can overlap and some weapons can be used in both tactical and strategic roles. Indeed, the strategic attacks on Hiroshima and Nagasaki utilized weapons between 10 to 20 kilotons. This was because the "Little

®Air Commodore Rippon Gupta was commissioned in the flying branch in the fighter stream in Dec 1985. He is a qualified flying instructor and has flown over 3200 hrs. His earlier assignments include Chief Operation Officer of a fighter base, Command Air Defence Officer and Air Officer Commanding of an Air Force Station.

Boy” and “Fat Man” bombs were the most destructive and the only nuclear weapons available at that time. While the tactical weapons are designed to meet battlefield objectives, the main purpose of strategic weapons is in the deterrence role, under the theory of Mutually Assured Destruction (MAD).

Tactical Nuclear Weapons (TNWs)

A tactical nuclear weapon refers to a nuclear weapon which is designed to be used on a battlefield in military situations. These are designed for use in battle, as part of an attack with conventional weapon forces. TNWs formed a large part of the nuclear weapon stockpiles during the Cold War. After the Cold War, the tactical nuclear weapon stockpiles of NATO and Russia were greatly reduced, and long-range ballistic missiles increased. Both the US and former Soviet Union deployed them in Europe (among other places) during the Cold War. Since TNWs are not covered in the existing US-Russian arms control treaties, these are still deployed.

Pakistan

In April 2011, Pakistan first tested the Hatf-9 (Nasr) missile, which it called a “Short Range Surface to Surface Multi Tube Ballistic Missile.” In the official statement announcing the test, Pakistan’s military said “the Hatf-9 missile was nuclear-capable and had been developed to be used at shorter ranges. With a range of 60 km, it carries nuclear warheads of appropriate yield with high accuracy, shoot and scoot attributes. This quick response system addresses the need to deter evolving threats. It added that the “test was a very important milestone in consolidating Pakistan’s strategic deterrence capability at all levels of the threat spectrum.” Tactical Nuclear weapons, that Pakistan has flight tested, are not very helpful in stopping a tank offensive or against fast-moving targets and they are clearly excessive for blowing up railheads and bridges. Very limited use of tactical nuclear weapons might serve to warn India against advancing deeper into Pakistani territory.

Testing continued throughout 2012 and 2013, and Pakistan’s Strategic Forces are believed to have inducted the missile into service following the October 2013 test. Pakistan has continued periodic testing since that time, most recently in September 2014. However, it is unclear whether Pakistan is capable of building nuclear warheads small enough to use on these TNW. Pakistan

developed tactical nukes as a way to counter India's conventional military superiority. In particular, Islamabad's tactical nuclear weapons were a response to India's development of the so-called "Cold Start" military doctrine.

After testing nuclear devices in 1998, Indian and Pakistani spokesmen downplayed the value of short-range weapons. Instead, Pakistani military stressed that any use of a nuclear weapon would have strategic consequences. This conclusion is sensible. It also greatly undermines the case for tactical nuclear weapons. Why risk crossing the momentous threshold with hard-to-defend and hard-to-control short-range delivery systems when more survivable and controllable longer-range nuclear forces are available for use in extreme circumstances? With India's growing conventional capabilities and pro-active military plans, Pakistan's military authorities have begun to emphasize the utility of tactical nuclear weapons.

India's nuclear programme is firmly controlled by civilians who view the Bomb as a political instrument. Pakistan's nuclear programme is run by military officers who think of the Bomb in military terms, and who are methodically filling in perceived shortfalls in nuclear capabilities as a means to shore up deterrence against a stronger neighbour. Pakistani leaders have not announced their nuclear doctrine.

Limitations of TNW

- (a) The yield of TNW is generally lower than 'that of strategic nuclear weapons, but larger ones are still very powerful and some warheads serve both roles. Modern tactical nuclear warheads have yields up to tens of kilotons or potentially hundreds; several times that of the weapons used in the atomic bombings of Hiroshima and Nagasaki.
- (b) In TNW, it is difficult to combine sufficient yield and portability. Small, two-man portable, or truck-portable, tactical weapons (Special Atomic Demolition Munition) have been developed, for demolishing "choke-points", such as tunnels and narrow mountain passes.
- (c) Use of tactical nuclear weapons against similarly-armed opponents carries a significant danger of quickly escalating the conflict beyond anticipated boundaries, from the tactical

to the strategic. The existence and deployment of small, low-yield tactical nuclear warheads could be a dangerous encouragement to forward-basing and pre-emptive nuclear warfare.

(d) Of all the categories of nuclear weapons, those with the shortest ranges have the least military utility and pose the greatest problems relating to security and unauthorized use. Generally speaking, the smaller the nuclear weapon and its means of delivery, the more susceptible it is to loss of central control. There are also heightened internal security risks associated with tactical nuclear weapons. For these reasons, stockpiles of tactical nuclear warheads in most countries' arsenal have been dramatically reduced.

Operations: Myths and Realities

Pakistan has developed the tactical nukes as a "quick response weapon" designed to support "full spectrum deterrence" by countering India's growing conventional force advantages. However; there are some realities that Pakistan has to come to grips with.

(a) Pakistan's efforts to develop and produce short-range, nuclear capable systems will seriously undermine deterrence stability and escalation control in the sub-continent.

(b) Pakistani military planners will realize the enormous operational and practical challenges associated with the effort to integrate nuclear fire planning and operations manoeuvres in an effort to enhance deterrence. Pakistani military planners and front-line soldiers will find battlefield nuclear weapons to be a logistical nightmare. Indeed, the unanticipated challenges that arise with the forward deployment and use of tactical nuclear weapons are incorporating nuclear fire planning with conventional manoeuvre operations, maintaining a clear chain of command in crisis scenarios where nuclear weapons are being used, and hardening communications against EMP blasts, among other dilemmas, offset the deterrent value these systems are purported to provide.

(c) The so-called "bonus effects" of tactical nukes demand close coordination between the ground and air commanders to ensure that friendly aircraft as well as frontline troops are

not endangered by the blasts, radiation, EMP or dazzle-effect associated with tactical nuclear weapon employment.

(d) Pakistan would be confronted by serious geographical challenges. It is less than 300 kilometres from the international border to Islamabad, and Lahore is 25 km from the border between the two countries. Consequently, Pakistani forces will have little space to withdraw during the conventional phase of hostilities before deciding to escalate to the use of tactical nuclear weapons. This is further complicated by the relative short range of systems like the Nasr. As a result, it is very likely that any employment of tactical nuclear weapons by Pakistan would have to come either at the very onset of hostilities or have a high probability of striking within Pakistani territory.

(e) Securing tactical nuclear weapons and their delivery means pose greater problems than strategic weapon systems due to their relatively small size and portability. Various indigenous terrorist groups dissatisfied with the Pakistani government or interested in sparking a war could pose clear threats to Pakistan's control over its most portable nuclear assets.

(f) Unlike Cold War antagonists which were separated by great distances, India and Pakistan share borders, many of which are high population centres. Thus, usage of battlefield nuclear weapons can cause damage (both immediate and latent) to civilian populations, thus making the impact strategic, even if the weapon itself is claimed to be tactical.

India should not go in for tactical nuclear weapons because it has some serious misgivings which are hard to ignore.

(a) These are extremely complex weapons (particularly sub-kiloton mini-nukes because of the precision required in engineering) and are difficult and expensive to manufacture, store and provide logistics support. Inducting them into service even in small numbers would considerably raise the defence budget.

(b) The command and control of tactical nuclear weapons has to be decentralised during war to enable their timely

employment. Extremely tight control would make their possession redundant and degrade their deterrence value. Decentralised control would run the risk of their premature and even unauthorised use, based on the discretion of field commanders, however discerning and conscientious they may be.

(c) The dispersed storage and frequent transportation under field conditions to avoid being easily targetted by enemy, increases the risk of accidents.

(d) The employment of conventional artillery and air-to-ground precision weapons by the enemy may damage or destroy stored nuclear warheads causing heavy casualties and destruction.

(e) In a state where the civil-military arrangement is assertive (wherein the civilian government exercises tight control over the military establishment), it is unlikely that the military will enjoy wide freedom of action in defence policy and nuclear doctrine. It can, therefore, be argued that with a strong control of the civilian government in New Delhi over India's military, it is unlikely that India will develop TNWs, as this would require the delegation of launch authorities to the military.

Recommendations

Having based its deterrence on the threat of punishment, it is imperative that certainty of retaliation to cause unacceptable damage be sufficiently and credibly conveyed.

(a) It is essential to reinforce profile of the nuclear command and control at both military and the political levels. There is a need for greater transparency of structures and processes that assure nuclear retaliation.

(b) The fact that measures are being taken to ensure survivability of the arsenal, as well as the chain of command at the primary, secondary and tertiary levels, and of the communication systems, should be occasionally mentioned.

(c) It should also be made widely known that Indian troops have the ability to fight through tactical nuclear use.

(d) Strengthening the profile of the Strategic Forces Command in public perception is necessary. The knowledge of the existence of the organisation that is mandated and is prepared to handle deterrence breakdown would assure the Indian public, while also sending a signal of intent and purpose to the adversary.

(e) Provision of better evidence and communication of political resolve to undertake retaliation is necessary. Periodic statements from authoritative levels like the National Security Advisor or Commander-in-Chief, SFC or occasional news reports about meetings of Political Council of the National Command Authority would signal the seriousness of the government's attention to the nuclear backdrop that confronts India.

Conclusion

Thousands of tactical nuclear weapons deployed by the United States and the former Soviet Union during the Cold War could have resulted in stories with tragic endings. Instead, we were all lucky. Maybe Pakistan and India will also be lucky. But the history of wars on the subcontinent is rife with miscalculations, as one side or the other has repeatedly been surprised by the beginning and prosecution of wars. No surprise could be more deadly or consequential than the use of nuclear weapons in warfare. Deterrence between India and Pakistan is becoming less stable with an increase in nuclear weapon capabilities. India and Pakistan have not addressed basic issues in dispute, nor have they agreed to set them aside. In 2018, India and Pakistan are no closer to resolving their differences that were several years ago.

Pakistan and India continue to diversify their nuclear weapon capabilities in ways that undermine stability. Two kinds of delivery vehicles-short range systems that must operate close to the forward edge of battle, and sea-based systems - are especially problematic because of command and control and nuclear safety and security issues. Unless the leaders in India and Pakistan work to resolve their grievances, or consider measures to mitigate their costly and risky strategic competition, deterrence instability on the subcontinent will grow in the decade ahead. The reported development of non-strategic nuclear weapons in Pakistan can either be viewed through

this prism of a search for stability, or as a destabilizing development. If “tactical nuclear weapons” are to be used during operations, the Indian position may well be that a nuke is a nuke and the use of even a tactical one is a strategic strike. The Indian decision makers may not attach importance to either the yield of the weapon used, or the territory on which it is detonated. The response could well be strategic on the lines indicated in the Indian doctrine. The search for strategic stability will continue to drive the development of a nuclear triad and other capabilities.

Next Generation Air Dominance

Air Marshal Anil Chopra, PVSM, AVSM, VM, VSM (Retd)[®]

Abstract

Evolving technologies, aerospace battle scenarios of the future, tailoring doctrines and conceptualizing aerial platforms and weapons are continuous processes of modern air forces. Most air forces are looking to replace the traditional fighter aircraft with a network of integrated systems disaggregated across multiple platforms, with increased dependence on space and cyber. Investments are being made to explore concepts like the arsenal plane, hypersonic and directed energy weapons, autonomous operations, and electronic attack. 'Next Generation Air Dominance' will mean effective combination of speed and manoeuvrability, payload and range, stealth, or low-observability and highly lethal and accurate weapons, and self-healing structures for the new platforms.

Air forces seek a fighter with “enhanced capabilities in reach, persistence, survivability, net-centricity, situational awareness, human-system integration and weapons effects”. There is a need for new breakthroughs in propulsion, materials, power generation and weapon technology. The tailless flying wing, “cranked kite” design concept currently appears the way forward for future fighter aircraft. The clear line defining atmosphere and space will get smudged, and more aerospace-craft would routinely transit between space and atmosphere, taking advantage of each. Combat engagements will be at much faster speeds and much greater distances. More and more platforms will be uninhabited, or optionally manned. There will be increased use of Artificial Intelligence (AI). Proliferating Uninhabited Air Systems (UAS) will bring

[®]Air Marshal Anil Chopra, PVSM, AVSM, VM, VSM (Retd) is a former Air Officer-in-Charge Personnel. He also served as a member of Armed Forces Tribunal.

in many platforms and players, including non-state actors.

Advanced engines such as 'Adaptive Versatile Engine' technology would allow longer ranges and higher performance. More efficient, easier to cool, Gallium Nitride (GaN) semiconductor material would improve reliability for radars. The Passive Aero-elastic Tailored (PAT) designed composite wing will be lighter, more structurally efficient and have flexibility compared to conventional wings. It is time for India to get its act together and think ahead, lest it gets left behind once again.

Studying and evolving technologies, aerospace battle scenarios of the future, tailoring doctrines and conceptualising aerial platforms and weapons are continuous processes of modern leading air forces. In its quest to dominate the air battlefield of the future, the US Air Force (USAF) is looking to replace the traditional fighter jet with a network of integrated systems disaggregated across multiple platforms. There is a need to develop technology to deter current and emerging threats and to produce the non-linear, game-changing combat capabilities required for national security. A 'family of systems' could address the range of threats in a highly contested environment. This is more so because Russia, and especially China are trying to close the capability gap with United States, by building long-range missiles, anti-satellite and anti-aircraft weapons to foil US forces' ability to penetrate. The new strategy will include capabilities with increased dependence on space and cyber to infiltrate enemy defences and defend own networks. USAF has specially budgeted for experimentation and prototyping in the area of air superiority, and is exploring concepts like the arsenal plane, hypersonic and directed energy weapons, autonomous operations, and electronic attack. Through the effort, called 'Next Generation Air Dominance'¹, USAF is working to find the most effective combination of speed and manoeuvrability, payload, and range for the new platforms. The right level of stealth, or low-observability, will also be considered.

The USAF and US Navy (USN) are leading the evolution of next generation platforms and technologies. Defence Advanced Research Projects Agency (DARPA), US Air Force Research

Labs (AFRL), Boeing 'Phantom Works', Lockheed Martin's 'Skunk Works' and National Aeronautics and Space Administration (NASA) are all aiding the work on concepts of 'Air Dominance' for 2040 and beyond. The Americans, Chinese and Russians are all working on the Sixth Generation fighters which will induct from 2028 onwards.² Fighter Bomber as a platform, therefore, is still here to stay. More and more of these will become uninhabited, or optionally manned. There will be dramatic changes in the aerial platform performance and aerial weapons. The clear line defining Atmosphere and Space will get smudged. Aerospace will soon become a common domain with more aerospace-craft routinely transiting between space and atmosphere, taking advantage of each. Combat engagements will be at much faster speeds and much greater distances.

Aerospace - Combined Dimension

Aerospace craft will aim to seize control establishing dominance/supremacy over the enemy's aerospace assets. They will operate under the control/co-ordination of space-based Early Warning and Control satellites with increased Artificial intelligence (AI). Satellite/aircraft based kinetic and Directed Energy Weapons (DEW) will soon be a reality and will be used for aerial or surface attack. Even if aerospace supremacy cannot be established, a "degree of dominance" in the air-space bubble in a given area and given time-space without prohibitive interference by opposing air forces will be desired.

Evolving Air Threats

The world already has eight overt nuclear powers, one covert nuclear power (Israel), and at least two nuclear aspirants (Saudi Arabia and Iran).³ Non-Proliferation (nuclear weapons) Treaty (NPT) is still not fully effective. More and more countries are acquiring missile technology. Missiles are becoming faster, more accurate, have longer range and larger multiple warheads. The weapon delivering air platforms are becoming faster and more efficient for deeper penetration. Airborne radars and missiles have much greater ranges. AI will find more optimum and timely combat solutions. Proliferating Uninhabited Air Systems (UAS) bring in many platforms and players. The non-state actors and rogue regimes which follow no international norms and ethics are trying to acquire weapons of mass destruction. It may become difficult to define threat. Any future air platforms would have to factor in all this.

Basic Concepts and Approach

Concepts evolving from the USAF and industry are mostly around supersonic tail-less aircraft. American sixth-generation fighters will feature AI as a decision aid to the pilot and borrow and expand ideas of advanced sensor fusion from F-22 and F-35. They will also have Positioning, Navigation, and Timing (PNT)⁴ and communications that allow big data movement between the inter-service's aircraft. Unlike the previous F-22 and F-35 that depended on new technologies that drove up cost and delayed introduction, USAF is keen to follow a path of risk reduction by prototyping, technology demonstration, and systems engineering before creation of the aircraft actually starts. USAF has analysed over 1450 air-to-air engagements since 1965⁵ and found that long-range weapons and sensors have dramatically decreased instances of dog-fighting. Therefore, one approach could be that the next-generation USAF fighter be larger and more resembling a bomber than a small, manoeuvrable traditional fighter. With the increasing air defence systems using electronic and infrared sensors and high-speed weapons, traditional designs relying on small size, high speed, and manoeuvrability may be less relevant and easier to intercept. It is suggested that a significantly larger fighter could rely on enhanced sensors, signature control, networked situational awareness, and very-long-range weapons to complete engagements before being detected or tracked. Larger planes would have greater range that would enable them to be stationed farther from a combat zone, have greater radar and IR detection capabilities, and carry bigger and longer-range missiles. The USAF Scientific Advisory Board has suggested a Penetrating Counter Air (PCA)⁶ platform that would combine long range, supersonic speed, stealth and manoeuvrability. PCA would have substantially longer range to fly long distances over the Pacific, especially in a situation where airbases in the vicinity of China are not available. It would also escort bombers deep into Russia or China, where the anticipated threat includes advanced networked air defence radars. It would include stealth against low or very high frequency radars, which requires an airframe with no vertical stabilisers. Requirement is significantly larger payload than current air superiority aircraft like the F-22.

Uninhabited Aerial Systems

Uninhabited aircraft technologies are already proven, and the future is UAS.⁷ World is at a transition. Solar-powered UAS are already flying. Currently, the solar-powered Zephyr holds the endurance record for UAVs, with 14 days in the air. Dual use (optionally manned) aircraft are also flying. USAF has already modified F-4s and F-16s to fly them remotely. In France, Dassault leads a multi nation delta wing UCAV 'Neuron' of the size of Mirage 2000. UK has a Strategic UAS programme 'Taranis'. UAS are taking-off and landing by themselves including on the moving aircraft carrier (Northrop Grumman X-47B). Autonomous air refuelling has been tested. Lockheed Martin's UCLASS drone 'Sea Ghost' looks rather like a stealth bomber and is expected to carry 1,000-pound class weapons. USA is also working on Hypersonic (Mach 6 to 8) Strike Bomber which is likely to be optionally manned. Uninhabited helicopter convoys will deliver supplies to troops deployed on combat front lines. The US Army's dramatic shift to a nearly all-unmanned flight over the next three decades is embedded in the UAS roadmap. USAF's UAS vision document indicates that by year 2047 every mission would be unmanned. Mass air raids with a swarm of UAS leading the manned aircraft strikes have already been tested.

American Next Fighter Approach

The USAF is pursuing development and acquisition of a sixth-generation fighter through the F-X programme to replace its existing aircraft such as the McDonnell Douglas F-15 Eagle and complement existing platforms in service such as the Lockheed Martin F-22 Raptor. The USN is pursuing a similar programme called the 'Next Generation Air Dominance' intended to complement the smaller Lockheed F-35 and replace its existing aircraft such as the Boeing F/A-18E/F Super Hornet. Next-generation fighter efforts will initially be led by DARPA under the "Air Dominance Initiative" to develop prototype X-planes.² USAF and USN will each have variants focused on their mission requirements. Dubbed the "Next Generation Tactical Aircraft"/"Next Gen TACAIR"⁸, the USAF seeks a fighter with "enhanced capabilities in areas such as reach, persistence, survivability, net-centricity, situational awareness, human-system integration and weapons effects". The future system will have to counter adversaries equipped with next generation advanced electronic attack, sophisticated integrated air defence

systems, passive detection, integrated self-protection, directed energy weapons and cyber attack capabilities. It must be able to operate in the anti-access/area-denial environment that will exist in the 2030–50 timeframe. USAF's new budget request for Fiscal 2019 shows, the service asked for US \$504 million for its next-generation air dominance research, development, test and evaluation programme. In the next five years of planned spending, USAF desires to invest roughly US \$11 billion on next-gen air dominance. China's quick aerospace advancement pace is driving the USAF to react. There has been explicit recognition "of the re-emergence of great power competition". Similarly, the USN has a much higher priority on range and speed. AI and optionally manned are becoming critical requirements generally. There is a need for survivability. Stealth is just one piece of the survivability equation, others such as ultra-lightweight armour and counter-directed energy capabilities are required. USN acknowledges that the service will need to keep costs low enough to buy a high volume of air vehicles. Numbers matter. Got to be able to have enough aircraft out there.

Sixth Generation Fighters

Sixth Generation fighter proposals are looking at greater speed, range, stealth and self-healing structures; developments that will require new breakthroughs in propulsion, materials, power generation and weapon technology. Self-healing structures in particular would pose a significant advantage over modern-day aircraft, remaining airborne despite taking heavy fire. The system comprises pockets epoxy resin and a hardener, installed around vulnerable parts of the aircraft such as the underbelly, hatchways and wheel wells. If the area is damaged, the contents of the pocket are released to form a temporary plug, helping the aircraft to operate in spite of the damage. New generation of engines will allow ultra-high altitude super-cruise. The avionics are supposed to withstand next generation electronic attack and cyber-attack, have passive detection, and integrated self-protection. The tailless flying wing, "cranked kite" design concept currently appears the way forward for future fighter aircraft. Major action is unfolding. The combat pilot still has backers and still has a place onboard.

Evolving Engine Technologies

The sixth-generation fighters are expected to use advanced engines such as 'Adaptive Versatile Engine'⁹ technology to allow longer

ranges and higher performance, where the ratios of bypass and compression airflow can be made variable to improve efficiency. The engines are expected to be ready when fighters are introduced by the USN in 2028 and the USAF in 2032. The systems are to work at altitudes from sea level to 65,000 ft at speeds from Mach 0.6 to Mach 2.5. The newer engines could vary their bypass ratios for optimum efficiency at any speed or altitude. That would give an aircraft a much greater range, faster acceleration, and greater subsonic cruise efficiency. A variable cycle engine could configure itself to act like a turbojet at supersonic speeds, while performing like a high-bypass turbofan for efficient cruising at slower speeds. A low-bypass configuration would be used for take offs and supersonic flight, and a high-bypass configuration would have high propulsive efficiency for cruising. Companies involved with next-generation engine development include General Electric and Pratt & Whitney.

Weapons of the Future

Future weaponry would utilize scramjets for the production of faster missiles. Despite failing its recent tests, Boeing's X-51A Wave-rider¹⁰ scramjet remains in development as it hopes to reach hypersonic speeds approaching Mach 6, a speed at which a missile could not be stopped by conventional air defence technology. X-51 technology is proposed for use in the High Speed Strike Weapon (HSSW), a Mach 5+ missile which could enter service in the mid-2020s. Continued experiments with DEW and lasers, used for defensive as well as offensive measures, delivering effects at the speed of light, are also likely to shape precisely what sixth generation fighters are equipped with. New aircraft will be as much about reusable weaponry (lasers) as it is about expendable weaponry. USAF is interested in three categories of lasers: low-power for illuminating, tracking, targeting, and defeating enemy sensors; moderate-power for protection to destroy incoming missiles; and high-power to offensively engage enemy aircraft and ground targets. USAF is developing a new air-to-air missile, dubbed the Small Advanced Capabilities Missile (SACM)¹¹ for 2030s. SACM would promise an improved solid rocket motor having synergized control enabled by combined aero, attitude control and thrust vectoring. The missile will have improved 'high off bore-sight' for rear hemisphere kills and 'lower cost-per-kill'. The missile would also incorporate energy optimising guidance, navigation and control.

The Miniature Self-Defence Munitions (MSDM), will enhance future platforms self-defence capability, without impacting the primary weapon payload. A sixth-generation missile could replace AMRAAM. A survivable, long-range missile with combined air-to-air and air-to-ground capabilities¹² is being evolved. Range would be a big factor to counter potential adversaries with Chinese PL-15. It will be multiband, broad spectrum – which aids it in survivability and reaching the target. DARPA's the triple target terminator (T3) programme envisions combined capabilities of Raytheon's AIM-120 and AGM-88 High-speed Anti-Radiation Missile (HARM). No aircraft is invisible, and using standoff weaponry early in an air campaign to open up weaknesses in an enemy's air defence will be required even for 5th generation fighter aircraft to operate in the area without assuming excess risk. Development of solid-state airborne laser capability is already underway.¹³ The solid-state laser systems defensively create a sanitised sphere of safety around the aircraft, shooting down or critically damaging incoming missiles and approaching aircraft with the laser turrets. Even attacking targets on the ground, such as individual people, with pinpoint precision, or shooting down ballistic missiles and other traditional targets are possibilities. Controlling aircraft's heat signature while using laser weaponry will be an issue. One option is to develop a thermal accumulator. Alternatively, off-board venting to manage the heat. Newer liquid based lasers promise enough energy to bring down an aircraft (about 150kw) yet is small enough to fit on a truck, and should be able to be mounted on a jet fighter. A laser weapon is expected to be mounted on next-generation air dominance fighters by the 2030s.

Evolving Other Technologies

For long military aviation doctrines and requirements drove technology. Today technologies are offering enhanced capabilities that are driving operational employment and tactics. Artificial Intelligence (AI), smart structures, and hybrid systems will dictate the future. Demand for streaming high-quality data requires bandwidth, which involves innovating sensor/processing systems. Mission computer systems and network-centric payload processing units enable onboard data fusion prior to sending to digital links. Thermally efficient, high-performance computing onboard the aircraft is essential. Next-generation avionics would be smaller, more efficient and capable of operating under extreme conditions. Gallium

Nitride (GaN) is a semiconductor material that is more efficient, easier to cool, and improves reliability for radars. Any system must be designed with aim for maintaining a competitive advantage in an austere budget environment. The Passive Aero-elastic Tailored (PAT)¹⁴, a uniquely designed composite wing will be lighter, more structurally efficient and have flexibility compared to conventional wings. This wing will maximize structural efficiency, reduce weight and conserve fuel. Hypersonic cruise, fuel cell technologies, hybrid sensors, improved human-machine interface using data analytics and bio-mimicry, combination of materials, apertures and radio frequencies that ensure survival in enemy territory are under development. Things will be built faster, better and more affordably, using 3D printing yet ensuring quality and safety standards. Additive 3D manufacture creates a world with spare parts on demand, faster maintenance and repairs, more effective electronics, and customised weapons. The development of a hypersonic aircraft would forever change ability to respond to conflict. Nano-materials will control sizes, shapes and compositions, and significantly reduce weight yet create stronger structures for air and spacecraft, yet drive down costs.

Heavy Aircraft Stealth

Fighters like the F-35 and F-22 may be stealthy, but their support assets, like aerial tankers, JSTAR, AWACS etc. are not. USAF needs 'heavy stealth revolution' for low observable tankers, transports, bombers and 'flying sensor and communications trucks'¹⁵, as these will be targeted. USAF could adapt the new stealth bomber design for the stealth tanker role. It will also give ability to insert special operations teams deep behind enemy lines via a stealthy high-altitude penetrating transport.

Other Sixth Generation Aircraft Programmes

Japanese sixth-generation fighter would be based on concept of aircraft informed, intelligent and instantaneous. Japan already conducted the first flight of the Mitsubishi X-2 Shinshin¹⁶ test-bed aircraft for this project. Russia says the aircraft will most likely be pilotless. For now the FGFA Sukhoi Su-57 is being inducted. The Mikoyan MiG-41 is reportedly a sixth-generation jet fighter interceptor aircraft currently being developed for the Russian Air Force. France and Germany announced they would jointly develop

a new combat aircraft to replace the Eurofighter, Tornado and Rafale. It is likely to be a twin-seat “system of systems” aircraft acting as a combat platform as well as controlling UCAV’s. France has abandoned any attempt to develop an indigenous fifth-generation fighter and has moved resources directly to development of a sixth-generation fighter aircraft. UK is committed to a next generation fighter programme to potentially replace the Eurofighter Typhoon post-2030. China is still evolving its J-20 and J-31. Some Chinese publications are talking of a sixth generation aircraft, referred to as Huolong (Fire Dragon). But as on date China has serious limitations on radar, avionics, and engine technologies.

Wake Up Time India

IAF today has 4th Generation fighters in upgraded Mirage 2000, MiG-29 and Su 30 MKI. Other than Mirage 2000, all are twin engine. The soon to induct Rafale is of 4th Gen-plus class. In the not so far future LCA will be the only single engine aircraft. IAF needs more 4th Gen-plus aircraft. The LCA production is slow and the initially planned 123 aircraft could take at least 8 to 10 years to induct. The 200 LCA Mk II will earliest start induction around 2030. The Sukhoi/HAL Fifth Generation Fighter Aircraft (FGFA) ran serious developmental and cost road-blocks, and has been abandoned. The HAL Advanced Medium Combat Aircraft (AMCA) is an Indian programme of a fifth-generation fighter aircraft. It is a single-seat, twin-engine, stealth super-maneuvrable all weather multirole fighter aircraft. Lessons learnt from LCA programme need to be imbibed and used to get the AMCA become a success to propel India into the new league. As on date the AMCA is still at project definition stage. At best the first flight could be around 2028 and induction around 2035. With fast depleting squadrons IAF will require 500 fighter aircraft of 4th Gen-plus class. In the long term, IAF should have a good mix of 300 Su-30 MKI, 250 LCA Mk II, 36 Rafale, 114 MMRCA class new fighters, and 150 AMCA. It is time to get the act together and think ahead, lest India get left behind once again.

Endnotes

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UAVs – The Silent Force Multipliers in Future Air Defence Operations

Lieutenant Colonel Piyush Kumar Sanwal®

INTRODUCTION

“What is called ‘foreknowledge’ can not be elicited from spirits, or from gods, or by analogy with past events, nor from calculations. It must be obtained from men who know the enemy situation.”

- Sun Tzu, The Art Of War, [500 BC]

The tussle for dominance in the defence-offence equation has been a regular feature of human conflict over centuries. With the advent of Revolution in Military Affairs (RMA) and concurrent advancements in Information and Communication Technologies (ICT), there is a paradigm shift in the fundamental war fighting concepts. Unmanned Aerial Vehicles (UAVs) have emerged and grown against the backdrop of such fast-paced developments in modern battlefield. The accuracy, long range and fire power of advance weapon platforms such as Precision Guided Munitions (PGMs) are of no use unless they are complemented by matching surveillance, target acquisition, battle damage assessment and weapon guidance capabilities. Therefore, besides ground based assets and air borne early warning systems, UAVs assume importance for imparting “force multiplication effects” to air and surface forces.

THE EMPLOYMENT OF UAVS IN MODERN WARFARE

“Victory smiles upon those who anticipate the changes in the character of war, not upon those who wait to adapt themselves after the changes occur.”

- Giulio Douhet

Definition and Conceptual Foundation

The US department of defence [DoD] defines a UAV as “a powered, aerial vehicle that does not carry a human operator, uses aerodynamic forces to provide vehicle lift, can fly autonomously or be piloted remotely, can be expendable or recoverable, and can carry

®Lieutenant Colonel Piyush Kumar Sanwal was commissioned into a Light Air Defence Regiment in the year 2004. He has excelled in major professional courses.

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a lethal or non-lethal payload. Ballistic or semi-ballistic vehicles, cruise missiles, and artillery projectiles are not considered unmanned aerial vehicles”. The operational concepts of UAVs are fast catching up because of the multiplicity of roles that can be performed by a UAV without risking human life, and even with the increasing costs it is still considered expendable as compared to manned aircraft.

Contemporary Roles, Missions and Capabilities

UAVs are effectively employed to provide real-time day and night reconnaissance, battlefield observation and surveillance of enemy shores and coastal facilities. Highly fused Intelligence, Surveillance and Reconnaissance (ISR) systems and processes permit advanced identification and understanding of adversary target systems greatly enhancing our strategic attack capability and facilitating Suppression of Enemy Air Defence (SEAD) operations. UAVs significantly complement the battlefield management functions such as directing close air support and armoured manoeuvre, artillery fire adjustment, radio relay missions and battle damage assessment. They are also employed for peace-time border surveillance, peacekeeping missions, operations by Special Forces and aerospace management in a Tactical Battle Area (TBA).

Depending upon the payloads on-board, UAVs can be comprehensively used for Electronic Counter Measures (ECM), Electronic intelligence (ELINT) and Communication Intelligence (COMINT). The imaging payloads such as Electro Optical (EO) and Infra Red (IR) sensors, and non-imaging Signal Intelligence (SIGINT) payloads enable UAVs to constantly monitor radiation characteristics and operation timings of tracking and surveillance radars for day and night reconnaissance. Almost all low speed varieties of the UAV carry EO, IR payloads, thermal imaging sensors like Forward Looking Infra Red (FLIR) which can penetrate camouflage, and Synthetic Aperture Radar (SAR). UAVs can also share information with various Airborne Early Warning (AEW) platforms such as Airborne Warning and Control Systems (AWACS), Joint Surveillance Targeting Attack Radar System (JSTARS), Satellites, etc.

Emerging and Enabling UAV Technologies for Future Operations.

There is growing emphasis on the development of Unmanned Combat Aerial Vehicles (UCAVs). The armaments carried by

UCAVs are miniaturized, Global Positioning System (GPS) guided, with stand off capability, taking on the task of identification, acquisition and homing on to targets. UCAVs play a crucial role in “pre-emptive” SEAD operations against Air Defence (AD) systems deployed in the TBA by locating and targeting mobile radars, ground-based weapon systems, command and control centres, and communication units. Some of the munitions being employed by UCAVs are Joint Direct Attack munitions (JDAM), cluster bombs and sensor fused weapons. Significant emphasis is being laid on acquiring enhanced loiter capability, automated launch and recovery techniques, enhanced combat radius for passage of data to and from other aerial platforms and target designation capability to other aerial platforms.

The military is seeking sensors with high-definition television standards, foliage penetration radar with hyper spectral imagery, and MTI Mode to track targets in all types of terrain throughout the spectrum of military operations. The Tilt Wing Rotary UAV System (TRUS) – a combination of rotary wing and fixed wing technologies is being developed to provide vertical take-off and landing capability and the ability to hover to facilitate maritime operations and Special Naval Tasks. Modular Integrated Communication and Navigation System (MICNS) is being developed to provide UAVs with a wide range of hardened, anti jamming communications and control capabilities. Substantial investments are being made in developing a new class of unmanned platform-Miniaturized Air Vehicles (MAVs). It is a highly survivable aerial platform due to features such as all weather capability, small size, low acoustic and Infra Red signal, stand off capability, modular design, Electronic Warfare (EW) capability and rerouting. These compact, light-weight and stealthy air vehicles carrying miniature sensors are playing a key role in the war against terrorism.

HARNESSING THE HIDDEN POTENTIAL OF UAVs IN FUTURE OPERATIONS – A CONSTRUCTIVE PARADIGM

***“He that will not apply new remedies must expect new
evils ; for time is the gratest innovator”.***

- Francis Bacon

**Reconnaissance, Intelligence, Surveillance and Target
Acquisition (RISTA) Missions.** RISTA can be defined as “the

process of integrating the intelligence process with surveillance, target acquisition and reconnaissance tasks in order to improve a commander's situational awareness and consequently their decision making". Integration of UAVs with other platforms is likely to enhance the utilisation of RISTA technologies to provide wide area surveillance and continuous coverage enabling the use of sophisticated weapons like 'smart bombs' and PGMs. Stealthy UAVs will likely play an increasing role in strategic reconnaissance and dominate airborne reconnaissance at all ranges. Conversely, the UAV-based air operations could also form the backbone of AD communication network. UAVs can also be employed suitably during the conduct of Information Operations (Figure-1 refers) in order to achieve information superiority by influencing the adversary's information systems and processes, communication and data networks, while at the same time preventing him from doing the same to us.

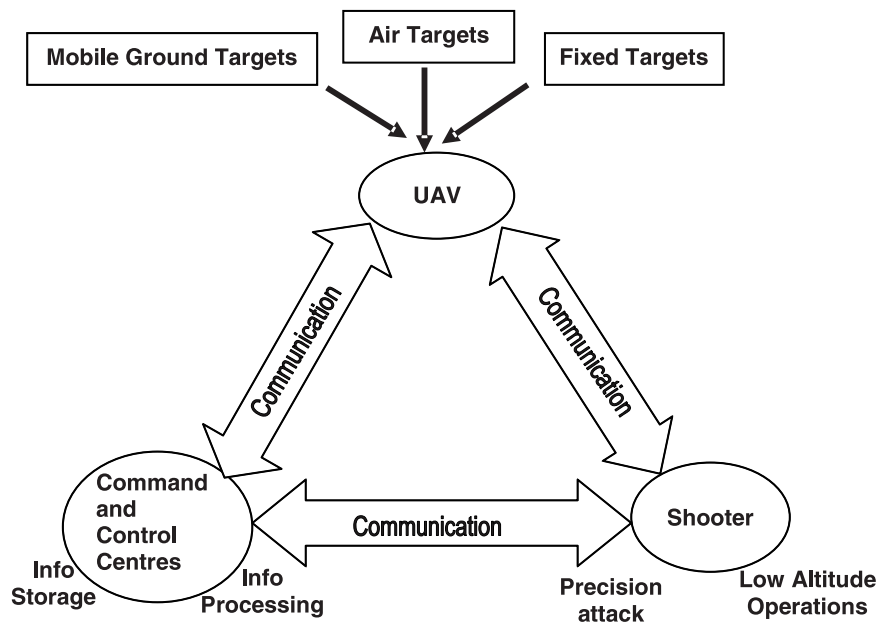


Fig. 1 : Impact of UAVs on Information Operations

Naval Air Defence and Maritime Operations. UAVs can be employed to conduct timely reconnaissance on the perspective enemy forces that an Amphibious Task Force (ATF) may confront, provide target information to long range precision weapons and

then follow up with battle-damage assessments of those targets. UAVs can also be employed in various maritime operations such as sea control, sea denial to the adversary, air strikes on strategic and tactical targets ashore and special operations as part of Special Naval Tasks.

Data and Communication Relay System. A low cost UAV loitering at high altitudes can be used as a platform to relay surveillance data, ELINT information, etc. between two stations operating beyond the line of sight such as between the aircraft and the radar station or between the AWACS and command and control centre. The UAV based multi-band, multi-mode communications node can contribute as a force multiplier by supporting offensive operations, especially when a ground based communication network fails to keep pace with the operations in terms of physical speed, power, frequency, bandwidth and channel availability.

Augmentation Of AWACS / AEW Systems. In the mountainous terrain of Jammu and Kashmir and the northeast, the performance of ground based radars is extremely restricted. To resolve this problem, UAVs can be equipped with smaller airborne radars with limited ranges to perform the role of gap fillers in the valleys and radar shadow areas. Data link with AWACS and other AEW systems can be utilised to augment the radar pictures and provide real-time target information.

UCAVs–The Future Combatants. UCAVs are likely to play a crucial role in future operations where awareness, responsiveness, reach, speed and agility are likely to be the determining factors. It would reduce the risk of casualties and remove the consideration for human physiological limits. Some of their suggested applications have been enlisted below:-

- (a) Stealthy, weaponised and loitering UAVs can be employed to dominate much of the close-strike mission and can be exercised effectively even in built up areas. The use of UAVs over manned aircraft should be preferred against heavily defended targets due to their higher level of survivability and risk free use of force, whereas against lightly defended targets they may be preferred due to the low cost of conducting warfare.

(b) UCAVs can be employed to attack high value fixed targets as well as support operations in the mission of strategic attack, interdiction and close air support. Strike aircraft and their complement of strike and air-control UCAVs can be employed by the Air Force in gaining and maintaining air occupation over contested territory.

(c) UCAVs can be integrated with manned and unmanned assets like AWACS, fighter aircraft like F-16s, Global Hawks and communication satellites to play an important role in 'pre-emptive' SEAD missions in future (where the exact location of enemy SAM sites are known).

Suppression of Enemy Air Defence (SEAD). The US DoD defines the term SEAD as *“an activity which neutralizes, destroys, or temporarily degrades surface-based enemy air defences by destructive or disruptive means”*. UAVs can be employed to detect enemy air defence systems, deploy attack weapon systems and provide Post Strike Damage Assessment (PSDA). Precise and accurate intelligence, space based guidance and navigational capabilities provided by UAVs can assist a strike aircraft in delivering the precision weapons accurately and generate 'effect based bombing' to ensure expeditious defeat of the enemy forces.

COMINT, SIGINT and ELINT Unmanned Platforms. UAVs having COMINT payload on board can be employed to locate and identify enemy's ground communication emitters, leading to detection of the locations of the enemy's military leaders as they communicate with their forces. The real time SIGINT and data transfer or live video images will make the enemy's electronic orbit transparent even before the hostilities have commenced and assist in planning offensive operations and SEAD. The UAV can also be operated as a "high altitude, long endurance and low observable platform" to support multiple strike operations. Besides jamming, the UAV can perform a decoy role by replicating the signatures of a manned strike aircraft.

MAVs – An Emerging Paradigm. MAVs, have the tremendous potential for ISR operations. Portable MAVs can be carried and operated by individual soldier for local reconnaissance. At sea, MAVs can be deployed from ships to gather intelligence to prevent acts of maritime terrorism. They can be fielded in a hostile environment to detect people equipped with shoulder fired missiles.

MAVs can play an important role in real-time detection and analysis of a biological or a chemical agent in an infected environment. They can also play an important role in humanitarian missions such as searching for survivors amidst rubble from earthquake. They can be integrated with manned, unmanned and satellite-based sensors to provide wide-area surveillance at low level of resolution to create a common operational picture of the battlefield. Swarm of MAVs equipped with sensors and miniaturized warheads can be employed to attack high value targets such as radars and launchers of SAM sites.

Network Centric Warfare (NCW). An all-inclusive definition of NCW can be stated as *“the product of convergence of certain key technologies such as computers, communications, sensors and precision fires and their exploitation to bring to bear maximum combat power at the right time and right place”*. Integration of UAVs with other force multipliers such as AWACS, aerostats, satellites and small and mobile ground-based radars integrated on a net-centric platform will lead to the following aspects:-

- (a) Simultaneous operations in geographically dispersed locations and utilisation of widely dispersed command and control elements, ISR elements and weapon platforms.
- (c) Information sharing will promote shared awareness, synchronisation across the networked forces and optimised employment of available resources within the time constraints.
- (d) Improved synchronisation yields greater mission effectiveness because of the speed of command, sharing of resources and increased lethality, survivability and responsiveness.

EMERGING THREATS AND CHALLENGES – A PERSPECTIVE ANALYSIS

UAVs have the potential to augment the capabilities of manned aircraft and act as the force multipliers. However, their potential application as tactical weapons in future operations will require recognising and incorporating future operational needs of the Services; the technologies and platforms to meet those needs, and ways to integrate those technologies so that they are cost effective and can be operated by a variety of war-fighting elements.

Some of the existing operational and technological constraints have been mentioned in the succeeding paras.

Advent of Precision Weapons. UAVs / UCAVs are likely to play only a limited role in electronic-attack missions as the prospective employment of electromagnetic-pulse weapons and directed-energy weapons will increase the risk of self-jamming for the unmanned platform itself. Ground Control Station (GCS), which is the hub centre for controlling UAV missions, is quite vulnerable because of its large size and modern precision weapons can be used against it.

Vulnerability of Communication Support. The current satellite communication infrastructure is incapable of supporting sizeable numbers of UAVs or UCAVs since they are major consumers of bandwidths essential for real-time interactive command and control systems like flight controls, video reception and transmissions. The data link of the UAV to maintain line-of-sight communication with the ground terminal can be located by suitably homing on to these signals. UAV to UAV relay is a possibility for extending the line-of-sight operations, but this increases risk and costs due to employment of more UAVs airborne and operating at all times.

Trade Offs Between Size and Capabilities. MAVs can operate within limited ranges due to their payload restrictions and are quite vulnerable to the inclement weather. To achieve survivability in missions, UAVs need to have a small size. However, need for power generation and weapon carriage could drive up its size and costs. Micro electro-mechanical systems, micro-manufacturing and nanotechnology could provide an exponential leap in micro-miniaturization of weapons, sensors and platforms.

Autonomous Mode of Operation. An autonomous platform will have less flexibility and greater vulnerability; moreover, it can't analyse its environment. The software complexity, automation and communication architecture of such platforms make them extremely expensive and operationally unreliable for many missions. Besides, the primitive nature of current target recognition programme implies that a human operator must be kept in loop to authorise the "kill".

Absence of Human Judgment. A manned aircraft provides the ability for a trained crew to evaluate large amount of tactical data in a high-threat environment and to change the mission plan as

required for strike support. The appearance of a previously unknown threat may only be detected by a human operator's ability to recognise patterns in the context of previous experience. This is very difficult to develop in an autonomous system.

PROGNOSIS

In the sum game, the “force multiplication impact” of employing UAVs as tactical weapons in future operations can be comprehensively defined in terms of its multifarious strategic, operational and tactical implications as explained in figure-2.

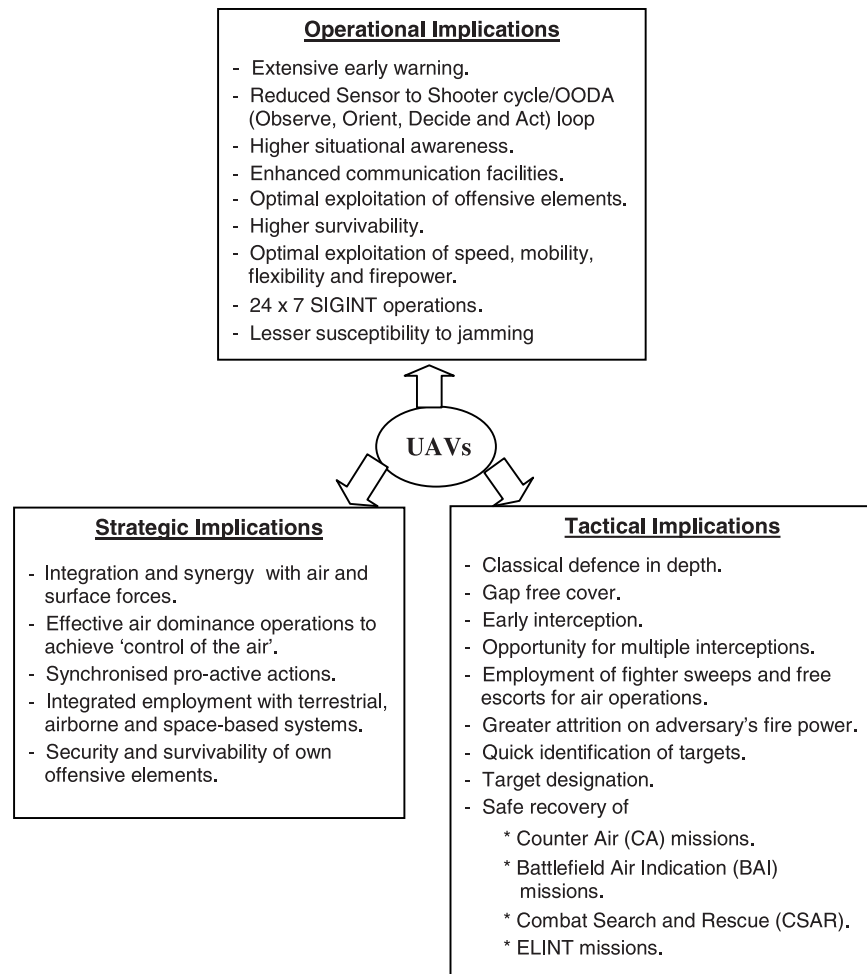


Fig. 2 : “Force Multiplication Impact” of UAVs on Future Operations

CONCLUSION

UAVs will play a key role in mission areas commonly categorised as *“the dull, the dirty and the dangerous”*. They will provide a force with access to the fifth dimension of warfare, Information Warfare, in addition to land, sea, air and space, hence fully embracing their role in the ongoing RMA. MAVs will see their potential applications in homeland security such as urban operations, counter insurgency and anti-terrorism. UCAVs will be employed predominantly to carry lethal weapons and provide active sensors against potent anti-aircraft weapons. However, the proliferation of sophisticated counter air assets and advanced air defence systems worldwide is likely to put off UAVs from making significant in-roads into the force-application roles such as Counter Air Operations and ‘reactive’ SEAD missions. The technology driven transformations may even replace manned aircraft in a number of tactical and strategic missions of air warfare. Nevertheless, it must be kept in mind that UAVs are virtually the ‘force multipliers’ and future operations will always require unmanned missions to deal with rapid changes and uncertainties of war.

“Flowing water avoids the heights and hastens to the lowlands, so an army avoids strength and strikes weakness. To target an enemy’s weakness, avoiding his strength, surprising him, and mastering the indirect approach have been the basis of victory throughout the history.”

- Sun Tzu, The Art of War [500 BC]

Manned and Unmanned Teaming - Scaling New Frontiers

Lieutenant General VK Saxena, PVSM, AVSM, VSM (Retd)[®]

Abstract

The widespread proliferation of the Unmanned Aerial Systems (UAS) in the combat domain has brought in a paradigm change in the way the warfare is perceived and conducted on the battlefield. Starting from their humble beginnings of providing a “look see on the other side of the hill”, today the UAS have revamped many a battlefield functions, be it intelligence gathering, surveillance, target acquisition, reconnaissance, battle damage assessment, contaminated area survey.... the list can go on.

Apart from all this, the most exciting dimension of the UAS has been their use in carrying out strike missions, either on their own or in concert with the manned platforms. The latter role is referred to as Manned and Unmanned Teaming or MUM-T for short. It is in this dimension where disproportionate gains are being achieved by the skillful amalgamation of the intelligence, grit, determination, tolerance for ambiguity, instant decision making capability and more of the combat pilot with the tremendous range, reach, endurance and the weapon carrying capability of the so called “dull, dirty and the dangerous” UAS.

The article examines various dimensions of MUM-T. In that it briefly visits the MUM-T timeline, presents an overview of the MUM-T scene the world over and how the enabling wings of technology are taking MUM-T to newer heights. In the end, a viewpoint is presented on how the MUM-T is likely to unfold in India and what needs to be done.

[®]Lieutenant General VK Saxena, PVSM, AVSM, VSM (Retd) is a former Director General of the Corps of Army Air Defence. He is a Distinguished Fellow at Vivekananda International Foundation.

The Revolution

The advent of the unmanned machines in the battlefield has been nothing short of a revolution simply because of the multiple capabilities they offer. The attackers are exploiting many a combat virtues of the so called Unmanned Aerial Systems (UAS) in terms of their long range and altitude capability, tremendous endurance, all weather all terrain operability, weapon carriage capability which can give a run for their money to the manned aerial platforms. All this at the cost of no risk of crew fatalities a continuum of task spectrum, that extends from surveillance to intelligence gathering, to battle damage assessment ,to control and direction of fire, contaminated area reconnaissance.... the list can go on. This is when one is not counting the possibilities of operation of the UAS in the civil domain which actually is limited by ones imagination alone or the combat and strike capabilities of the UAS.

Talking of the combat capabilities, there is an emerging concept called the Manned and Unmanned Teaming or MUM-T for short. This concept basically relates to that win-win situation in which the human genius of a combat pilot, his tolerance for ambiguity, hunch, intuition, experience, instant decision making capability and more, is amalgamated with the brute lethality, long endurance, needle-like precision and all-terrain and all-weather capability of the modern day UAS in joint missions. This concept is fast catching up across the leading nations of the world since the initial results show multiplicative and disproportionate gains, albeit not without many a challenge; some operational, some ethical.

This article examines the emergence of MUM-T over the years and brings the reader up to date with the cutting edge developments in this field.

The MUM-T Timeline

Going back on the timeline shows that not exactly MUM-T, but something remotely close to it, happened way back in World War II when a B-17 Flying Fortress of the Royal Air Force (RAF) started as a manned mission to bomb a submarine bunker in Germany. After achieving a cruising altitude of 20,000 ft and arming the explosives the two-pilot crew parachuted into the English Channel letting the aircraft fly to its intended target as a robot. Though the mission failed but with it, a step-cousin of MUM-T

passed into evolution that would tickle the minds of inventors in the years to come¹.

As the time rolled by, the power of the unmanned continued to prove its unmatched utility as the 'Dull, Dirty and Dangerous' machines, credited with many operational virtues, proliferated more and more in the operational domain. Soon the debate on manned versus unmanned became irrelevant and subject matter experts started to look at the 'AND' solutions instead of 'OR' solutions.

The earliest reports came in of the joint exercises between AH64 D/E Guardian being paired with UAS like the MQ1 Grey Eagle (a derivative of MQ1 Predator) and RQ7B Shadow UAS. Similar exercises were reported using BEL OH 58 Kiowa helicopter being paired in joint exercises with several different UAS².

MUM-T Today

Cutting straight across to 2015, there is an account by an attack helicopter (AH) battalion commander stating that in the Afghanistan war, some 60 per cent of the direct fire missions were helped out by MQ1C Grey Eagle drones enabling Apache crews to see full-motion videos of the areas they were flying into or the enemies they were sent to attack, well before they reached their destinations³.

Today's MUM-T enablement not only allows the pilot in the manned platform to view the videos generated by the unmanned machine, but also enables him to control its sensors and its flight path and permits him to fire the weapons carried on board the UAS⁴. This is a phenomenal enablement. Not only restricted to helicopter-UAS teaming, things are moving ahead in trying to achieve MUM-T using combat aircraft and UAS⁵. Reports of the F35 joint strike fighter being capable of controlling the sensors and payloads of nearby UAS or even a swarm of UAS are doing the rounds⁶.

MUM-T the World Scene

While the above MUM-T examples are generally related to USA, open sources tell us that MUM-T as a concept, is fast taking shape in other nations leading in aerospace power and dominance. Some examples are as under :-

- (a) According to a report, while Russia wraps up its development on the Sukhoi T50 PAK FA fifth generation stealth

fighter, it is exploring concepts in the MUM-T domain. Reportedly, the PAK FA will have modifications so as to make it MUM-T capable. Also, reports are already pouring in of future generation Russian aircraft designs (sixth generation and beyond likely to be realisable in the timeframe of 2030-2035) which will all be MUM-T capable. Where is the doubt that MUM-T will see many a grade of future up-gradation in the machines yet to come?⁷

(b) In 2014, M/s Finmeccanica completed a capability concept demonstration for a rotary wing UAS for the UK MoD exhibiting launch, recovery, mission management and mission system integration with manned platforms.⁸

(c) China is also gearing up in the MUM-T domain in a big way, though specific information is scanty in the open source domain.

The Concept of LOI

Connected intrinsically with MUM-T is the concept of LOI or the level of Interoperability between manned and unmanned platforms. Classified through grades 1 to V, the LOI tells us just how much the manned and unmanned platforms are interoperating with each other and one another. Starting with the bottom line of LOI 1 - where only the ground control station (GCS) can receive the UAS data indirectly (implying time delayed verbal reports), the interoperating levels are scaled up in steps. LOI II - refers to a real time payload feed. LOI III relates to the actual control of the payload (sensors/weapons) on board the UAS. In LOI Level IV - the manned platform is in total control of the UAS except its launch and recovery while at LOI - V even that function is in the hands of the manned platform. The current level of MUM-T operations is hovering between LOI IV and V.⁹

MUM-T on the Enabling Wings of Technology

MUM-T as a viable concept is fast acquiring new dimensions as many new things are being tried and newer windows of opportunities being opened through comprehensive technological enablement. Some examples are as under :-

(a) When manned and unmanned systems are threaded into joint missions, the cockpit workload of the pilot increases

manifold since the man-in-the-loop is now to control multiple machines, some directly and others indirectly. Technology is at play to reduce this workload saturation by letting the UAS do things without pilot interface by building suitable AI suits. These could include maintaining a threshold surveillance level activity as default and auto-reporting variations in levels, picking up targets as forward scouts based on threat library data, fully autonomous flying to destinations, keeping stations based on pre-fed data, auto battle damage assessment and more. The idea is, that the pilot manages the multiple UAS payload only by 'exception' where either a human decision interface is required or a manual override is needed in case of forcing a change or averting an emergency.¹⁰ Over time, smart algorithms and AI suites will gradually permit many more battle functions to be taken on by UAS without human intervention. Tasks like mission planning (processing with givens), data collection and analysis are cases in point. For better interoperability and to avoid collisions while operating in the same airspace in real time, the best of the line capability is being built into unmanned systems. In 2016, General Dynamics experimented with the idea of fitting a state-of-the-art active electronically scanned array (AESA) radar on board its MQ9 Predator. Such high-end sensors will not only be ideal for aiding collision avoidance, but also, will provide capabilities for independent targeting of incoming threats, hunting for potential targets and their selection based on AI suite on board, duly complemented by a dynamically updated threat library. Such systems could also be suitable platforms for ELINT and even act like jammers on demand.¹¹

(b) In line with the thought of UAS to be independent platforms for the end-game, their weaponisation started long back. AIM 9X Sidewinders, AIM 120 AMRAAMs and AGM 88 ARMs are now mountable on front-end UAS platforms like MQ-9 Predators or M2 Shadow.

(c) In the early days of MUM-T, integration between two dissimilar machines (UAS and manned platform) was achieved by engineering an audio visual (AV) communication link that forged a hand-shake of data and video. Technology has taken us a step ahead in which a common data link (CDL) ab-initio

provides a common bridge threading a large number of dissimilar platforms for a seamless highway of data sharing. The CDL has built-in security protocols and encryption. The high-end modems provide adequate bandwidth, giving a capability of streaming full motion videos and pictures in real time. The communication and data link that used to be engineered to provide the interoperability to the requisite LOI level is now coming in-built in the MUM-T suite.

(d) Besides the interface between two aerial platforms, MUM-T has long been happening between the UAS and soldiers and commanders on the ground in the tactical battle area (TBA). As a part of CDL extension, the ground users are getting equipped with such tools that allow them to connect with the UAS for multiple tasks based on authorisations and protocols. It could be simply to request for a motion video relating to terrain of interest or an authorisation to take control of the electro optical/infrared (EO/IR) sensors on board the UAS thus getting the capability to build situational awareness in a directed mode.

Far ahead of just being in network contact, the MUM-T task spectrum is steadily widening as new avenues in mutual enablement are being thought of and practised in joint exercises. A snapshot...

(a) In joint target engagements, manned and unmanned machines are sharing target accessibility co-ordinates through imagery, sensor data, situational map overlays and real-time spot reports. Complementary weapon and munitions selection is ensuring maximum multiplicative effect at the target end and auto de-conflicted munitions trajectories from multiple airframes are bringing in a degree of safety.

(b) Auto sharing of post-strike imagery in real time is permitting decision of repeat strike.

(c) Enhanced observation and situational awareness envelope is being ensured through gridding the multiple sensors on board fused for multi-sensor tracking (MST) so as to avoid duplication in reporting of the same target by multiple sensors.

When the MUM-T concept was just about evolving, the 'teaming' per se was essentially between the pilot on board the combat aircraft and the UAS controller at the GCS. Technology-driven, there is a gradual shift taking place in this arrangement in that as the UAS are steadily achieving more and more autonomy in launch/recovery, navigation, observation and sensor/weapon/EW operations they are getting more and more disconnected from the GCS. The connect is now happening increasingly between the combat pilot and the 'resources on board the UAS' (the human-machine interface) gradually working to a state where the UAS will be totally independent of the GCS and will act as a force-multiplier tool in the hands of the combat pilot.

MUM-T the Ethical Dimension

While all the advantages of MUM-T stand on one side, on the other stands the solitary question—'Is the world yet ready for Machine over Man?' measured on the scale of the ever-increasing autonomy for the unmanned platform. The questions that stare us today actually lie in the ethical domain. Some of these run on the following lines:-

- (a) Can the unmanned machine be given the autonomy to strike on a target it has identified, based on its AI suite and threat library?
- (b) In an end-game sequence, can a UAS be given self-authorisation to re-strike in case its sensors give a miss or inadequate kill feedback?
- (c) Can a UAS be allowed to leave the formation, albeit for a brief period, in order to take on an identified target of opportunity?
- (d) Can an unmanned machine lead a MUM-T mission? (this lead is not implying a scout role but a proper command lead)

The present-day answer to all these and more is an emphatic NO as the manned community is firmly fixed on 'seek permission before every strike' and the invariable override function of 'Man-in-the-Loop' across board. Well, this is the position as of today, but who has seen tomorrow? Concepts and mindsets may change, who knows? Time has the key!

MUM-T in India

We have indeed come a long way in our nearly two-decade old journey when the Indian Army in 1997-98 acquired the Searcher Mark 1 UAS from IAI Malat to be quickly followed by the other two Services. Over time, came the Searcher Mark II and the Heron UAS. However, all these have been dedicated to very basic and traditional UAS roles encompassing surveillance, reconnaissance and intelligence gathering missions from the northern and eastern high altitude areas to the southern deserts (DRDO UAS products not covered). The following open source reports are interesting.

(a) The Defence Acquisition Council in its meeting on 25 June 2016 has cleared the acquisition of 40 Predator surveillance drones from the US company, M/s General Atomics. These drones are meant for the Indian Navy for surveillance tasks in the Indian Ocean Region (IOR)^{12,13}.

(b) The *Indian Express* reported on 8 April 2016 that the IAF has also asked Washington about acquiring 100 Predator C UAS to carry out strikes on militant camps.¹⁴

(c) The *Economic Times* reported on 28 September 2015 that India and the USA have signed a USD 3 bn deal for the purchase of 22 AH 64 Apache attack helicopters and 15 Chinook heavy-lift helicopters from M/s Boeing.¹⁵ This is Apache Block III configuration; stealthy, versatile, designed for all kinds of missions with laser and infra-red systems for day-night operability and armed adequately with Hellfire missiles, 70mm rockets and an automatic cannon.

What does all the above indicate? Surely and steadily we are going into platforms that can support the emerging concepts like the MUM-T.

That said, MUM-T does not happen overnight. Concepts have to be evolved, network-centric communications on the lines of CDL have to be developed step-by-step that bridge the divide between the UAS and the AH seamlessly, critical skill-sets have to be identified and crews have to be trained both in the manned and the unmanned domain and specific battle drills have to be perfected over years and years of training. And what position do we have on the ethical baggage ? That indeed is a long haul.

Be that as it may, the author is of the view that it is high time to commence building the conceptual framework for MUM-T operations. Think tanks like the Centre for Joint Warfare/Land Warfare/Air Warfare Studies (CENJOWS/CLAWS/CAPS) could start putting in place the thought process duly supported by the three Services, defence public sector undertakings (DPSUs), DRDO and the industry. Services training schedules could subsequently get re-structured over time to accommodate new concepts and doctrines. Once baby steps are taken, the pace will build up in the years to come.

Going by the cliché—The journey of a thousand miles begins with a single step.

Endnotes

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Review Article 1

“Will Tibet Ever Find Her Soul Again? India Tibet Relations 1947-1962 part 2”

Claude Arpi

The title of the book contains prophetic words from the 1952 annual report of Maj Krishnatry, the Indian Trade Agent (ITA) at Gyantse, sent in 1953, when China was subjugating the Tibetan people and expanding their influence on the plateau and India had acquiesced that Tibet was not an independent nation.

This is a brilliant book, extremely well researched with outstanding analysis of data and facts, simply articulated and easy to comprehend. It covers four years (1951-1954) of the overall period under research and analysis by the author of India Tibet Relations 1947-1962, and the role of China and India in the trajectory of the fate of the people of Tibet. Multitudinous facts, data and details were unknown and hidden from the public for too long are now part of this excellent work. The author has done painstaking and commendable work in spite of some files, reports, correspondence and notings still undisclosed or unavailable.

The book is enlightening and educative, illustrating the contrast in the approach of the two largest countries of Asia to real politic, one an expansionist power and the other seeking goodwill and a seat on the world stage with no power to impose its stature.

Mao-Tse Tung moved the PLA to remote and inaccessible areas to enforce China's strategic claim to outlying areas of Tibet and Xinjiang, including Aksai Chin of India. Whereas, Pandit Nehru firstly by accepting Tibet as part of China excluded a buffer state and secondly by maintaining the tribal identity of North East Frontier Agency (NEFA) brought about strategic unpreparedness. The dangers of communism were glossed over under the illusion that goodwill can bring peace and tranquility. With each event came indicators of things in store in the future. Closing of the Consulate at Kashgar and downgrading of the mission at Lhasa to Consulate, checking of Indian Trade Officers by People's Liberation Army (PLA), ferreting out of two Indian nationals from the house of the mission chief at Lhasa, denial of access to areas visited by Indian Trade Agents traditionally in the past, unmistakably pointed to nefarious designs by China, these were missed under the friendship syndrome. The supply of rice to PLA through Indian ports and territory allowed faster and greater deployment of troops close to areas for Chinese strategic designs. Feeding your own potential adversary can only be called catastrophic at the least.

Will Tibet Ever Find Her Soul Again? India Tibet Relations 1947-1962 vol 2. by Claude Arpi, New Delhi : Vij Books, 2018, 569p, Price Rs. 1550/-, ISBN 9788193759189.

Journal of the United Service Institution of India, Vol. CXLVIII, No.614, October-December 2018.

The decision by the Governor of Assam to send officials to far flung areas of NEFA and eliminate the influence of Tibetan monasteries and tax collectors ensured NEFA was brought under the rule of Indian constitution, Maj Bob Kathing and many others being the pioneers in the assimilation. This coupled with the deployment of devoted officers to far flung areas integrated these areas with India, these unsung heroes sacrificing comfortable lifestyles to work for the country.

The decision to cede Tibet to China because of anti-colonial mindset and abhorrence of imposition of unequal treaties by the British Empire brought the Chinese dragon to India's borders. This approach deprived India of its locus standi on the McMahon Line and the previous treaty obligations of 1896, 1904, 1906, and 1914. China exploited these voids to deny India in Tibet its customary, historical and usage rights in vogue over the centuries.

The village of Minsar including Mount Kailash and Mansarovar were part of J&K state vide the treaty of 1684. This territory was gifted to China without a claim or discussion of Indian sovereignty. The extent of trade between West Tibet and India is another feature unknown to Indians as also the good work done by the ITA at Gartok, unfortunately all curtailed by the Chinese through the Panchsheel Treaty.

India was seemingly aware of the construction of the Aksai Chin road by China in 1954, but for reasons unknown this information was kept under wraps or neglected on purpose. Probably the attitude 'not a blade of grass grows there' blinded Indian leadership to the value of the strategic roads which were being constructed to establish China's military capability in Tibet. Declassified CIA reports reveal the Chinese plans and the frantic speed of work to develop communications from mainland China to Tibet.

Ambassador Raghavan's assessment of 1953 at page 491 (is a must read) and Sumul Sinha's (chapter 18) earlier report of China's intentions and future attitude did not find any serious evaluation at New Delhi. On the contrary, the latter was ridiculed and admonished for overstating the case. Both these reports reflect the current as well the past attitude of China to India. The Panchsheel Treaty signed on 29 April 1954 whilst being hailed as a case of good statesmanship left many pending issues unresolved including the boundary delineation, the details in this book clearly highlighting the major blunders that later brought India a humiliating defeat in 1962. The treaty also closed India's access to many areas in Tibet straightaway, and totally a few years later. The negotiations leading to the treaty also kept the Tibetans out of the loop, either for starting negotiations or consultations on the final form.

The last chapter details the floods of 16/17 July 1954, which washed away the Gyantse Trade Post and the escort located there, these were never built again, the omen of events to follow, foretelling the portentous future.

The role of Ambassador Pannikar, PM Nehru and T N Kaul comes under scrutiny that led to the wrong decisions which later would humiliate India in 1962, and continue with the problems today.

The book details the telling naivety of India's diplomats and the Prime Minister to comprehend Chinese intentions and negotiation skills. The most startling revelation is the (open secret) absence of intelligence capability in Tibet and China, and the will to create it by India.

Indian political leadership, Indian strategic analysts, diplomats, international relations experts and military officers will benefit immensely by devoting time to read the book. It would help to understand the past mistakes, follies of mindsets or rigidity of thoughts or prejudices, China and its approach to strategic issues, the value of patience and details in negotiations, and the significance of historical records.

Lieutenant General Balraj Singh Nagal (Retd)

Review Article 2

The Life of Maulana Jamaluddin Abdul Wahab of Farangi Mahall, 1919-2012

Francis Robinson

Francis Robinson is known for his contribution to Islamic studies. This voluminous book is as much about the life as also about the times of Jamal Mian. Robinson's easy, rambling style of writing is pleasant but extremely verbose as he goes into unnecessary details. Robinson's narrative that post 1947, in UP, Muslims, especially those in important posts were discriminated against *en masse* and *persecuted* is unsubstantiated by evidence. Robinson opines that Jamal Mian's father Abdul Bari claimed ancestry from Abu Ansari – Prophet's companion. The Author's view is that these Muslims felt power to be their birthright- even if Jamal Mian's ancestors were *Ulama* or *Sufis* more than soldiers or administrators. Jamal Mian's ancestors were bestowed Farangi Mahall at Lucknow by Aurangzeb, that became a leading seat of Islamic learning in South Asia. The duration of *maulvi*, *maulana*, and *allama* courses was five, three and two years respectively. Jamal Mian completed all courses as a teenager! Jinnah, even allowed this ambitious and precocious teenager to speak about the injustice meted out to Arabs in Palestine and the need for restructuring the Muslim League! Fully indoctrinated into politics, Jamal Mian helped Muslim League fight elections and pre-1947 won a seat for himself in UP Legislative Assembly elections. A multifaceted personality Jamal Mian was a voracious reader. A noted Islamic scholar; he championed the cause of Muslim League, Islamic brotherhood the world over and the formation of Pakistan. A respected clergy, he delivered *khutba* by leading *eid-ul fitr* prayers as well as participated in *qawwali* on various occasions. A devout Muslim, he was regular on pilgrimages and created a circle of *muhajirs* in Pakistan. As an entrepreneur he successfully managed business in East Pakistan and later in Pakistan after creation of Bangla Desh, freewheeling between the three nations. Jamal Mian did not hide his anti-India sentiment. Of his own volition he became a Pakistani citizen in 1957 while his wife followed suit in 1963. An astute diplomat, Jamal Mian cultivated the likes of Jinnah, Iskander Mirza, Ayub Khan, Nehru and Rafi Ahmad Kidwai. This ensured safety for his family as also his property after partition. Although he lived and died in Pakistan, most of his children are settled in the UK. This is an interesting book about a unique individual who faced many odds including a bi-polar illness but was successful in overcoming them.

Major General Ashok Joshi, VSM (Retd)

The Life of Maulana Jamaluddin Abdul Wahab of Farangi Mahall, 1919-2012.
Francis Robinson. (Karachi, OUP, 429pp, 2017, ISBN 978-0-19-940568-8)

Journal of the United Service Institution of India, Vol. CXLVIII, No.614, October-December 2018.

Short Reviews of Recent Books

China in the Indian Ocean: One Ocean, Many Strategies. By Cdr MH Rajesh (Pentagon Press, New Delhi, 2018), pp. 347, Price Rs. 1495, ISBN 978-93-86618-36-8.

This book by Commander MH Rajesh provides an account of China's strategy and increasing footprints in the Indian Ocean Region (IOR). Spread over ten chapters, it is the result of his research at the United Service Institution of India.

After introduction, the book dwells on the Belt and Road Initiative (BRI) in the second chapter and explains its positing as a 'grand strategy' that seeks to fulfill the 'China Dream'. The third chapter narrates the evolution of modern Chinese maritime military strategy through a novel format of "Four roles and Three-and-a-half fleets". The fourth chapter labeled as "Strategy of Securing Sea Lanes" provides a brief background of disputes in the South China Sea and explains the award of the Permanent Court of Arbitration in October 2015. The fifth chapter provides an overview of the IOR with regard to flow of energy and trade, and the security scenario. There is an evaluation of the existing regional structures and their contribution to security. The author also provides the elements of the framework within which the formation of a future structure can be envisaged. The sixth chapter "Strategy of Nexus to Alliance" provides a detailed look at the China Pakistan Economic Corridor (CPEC) and its strategic implications. The next chapter labeled as "Strategy of Maritime Nodes and Networks" provides details of Chinese activities in Sri Lanka, Maldives and Bangladesh with regard to political influence, investments and arms deals. This chapter also provides an overview of the commercial maritime network being built by China with regard to port ownership, shipping operations and shipbuilding. The eighth chapter, "Strategy of Access", lists the Chinese activities in Myanmar, Thailand, Malaysia and Indonesia. A major portion of this chapter is devoted to Myanmar. The ninth chapter, "Strategy of Resources" covers China's quest for resources in the IOR and covers activities in West Asia, Africa, Mauritius, Seychelles and Australia. A major portion of this chapter is devoted to China's options for transporting oil and gas, and the related economics. In the end, the author provides the conclusions of his study.

This book is an admirable attempt to connect the dots and provide discernible patterns to China's activities in the IOR. Starting

with a broad-brush concept of BRI as a 'grand strategy' and the evolution of Chinese maritime strategy, the book goes on to provide granular details of Chinese presence across the region. Written in an easy style, it straddles multiple disciplines of history, economics, energy, politics and military strategy to present its case. It is adequately illustrated with maps and has rich data in tabulated and pictorial form. Elaborate end notes, appendices and bibliography are provided to supplement the text. Overall, it is an excellent book for understanding China's activities in the IOR.

Commander S Sarangi

Pakistan's Tactical Nuclear Weapons Giving the devil more than his due? *Inderjit Panjra* (New Delhi, Vij Books India Pvt Ltd, 139pp, Rs 795/-, ISBN: 978-93-86457-60-8)

This is a well researched assessment about the possible impact of Pakistan's Tactical Nuclear Weapons (TNW) in our future confrontations. Ever since 1980 when the two nations became nuclear weapon (NW) states the politico-military dynamics underwent a change. Buoyed with its newfound NW status but without any sagacity, Pakistan went in for TNW terming it as a game changer and hoping to offset its asymmetrical disadvantage *vis-a-vis* India. Colonel Panjra attempts to answer the question by logically analysing and presenting a comprehensive analysis *ab initio* as it were. The Author begins by discussing the relevance of NW and the drivers of Indo-Pak conflict. One of the key elements in Pakistan's strategic culture mentioned by the Author is its false notion of 'pride in Muslim sovereignty'. Reasons for the immense restraint shown by India in dealing with a recalcitrant neighbour have been well brought out. Subsequently, the Author carries out a reality check on nuclear deterrence and efficacy of TNW per se. Pakistan's Hatf-9 (NASR) has a range of 60 km. The air launched/submarine launched systems are mentioned albeit briefly. Though the Author highlights the technical difficulties of miniaturizing Plutonium based warhead, the bottom line is that Pakistan has tested all its sub-systems successfully. The sparse availability of Plutonium in Pakistan as well as the dilemma for policy makers for balancing its usage between strategic NW and TNW remains. The Author has discussed the damage template in some detail and he opines that 436 TNW will be required to halt the thrust of an armoured division. The dilemma for Pakistan would be when to

employ TNWs in case of a minor, medium level or a major penetration by Indian Battle Groups! In Chapter 4, five scenarios of confrontation, although somewhat unnecessarily dramatic in detail are discussed. Subsequently, the Author expands on India's response that can range from a massive strike, a graduated one or non-nuclear. Finally, in Chapter 5, the Author presents various options available to India to achieve peace and stability in the region which in the present context is more of a mirage. Colonel Panjra has examined the core issues surrounding Pakistan's TNW in depth and his rationale for conclusions are logical. The study is recommended for use in our schools of instruction with advantage.

Major General Ashok Joshi, VSM (Retd)

**RESULTS : LIEUTENANT GENERAL SL MENEZES
MEMORIAL ESSAY COMPETITION : 2018**

Subject : "India's Wars since Independence: Would we have performed better if we had a Chief of Defence Staff (CDS)"

First	IC – 58813 F Col S Dinny Directing Staff DSSC, Wellington (Nilgiris) Tamil Nadu – 643 231 Email : dinny14@gmail.com	Cash Award of Rs.10,000/-, Certificate and entry accepted for publication.
Second	IC -59686 K Col Prashant Pant 61 Field Regiment Pin- 925761 C/o 99 APO Email:prashantpant14@gmail.com	Certificate

**RESULTS : USI GOLD MEDAL ESSAY
COMPETITION 2018**

GROUP 'A'

SUBJECT : "THE ONE BELT ONE ROAD (OBOR) / BELT AND ROAD INITIATIVE (BRI) OF CHINA : SECURITY IMPLICATIONS FOR INDIA AND THE INDO-PACIFIC REGION (IPR) AND RESPONSE STRATEGIES".

First	Personal No. : 04584 T Capt T Sugreev, IN Locker No 83, Naval Wing, DSSC, Wellington, Nilgiris – 643 231 (Tamil Nadu) Email : sugreevt@yahoo.com	Gold Medal, Cash Award of Rs.15,000/- and entry accepted for publication.
Second	Personal No. : 52028 W Commander Apoorv Pathak IHQ MoD (Navy) / DASE 'A' Block Hutments, Dara Shukoh Road, New Delhi – 110 011 Email : marine.apoorv@gmail.com Mob No. : 94968 85635	Cash award of Rs.10,000/- and entry accepted for publication.

GROUP 'B'

SUBJECT : "INDIA – A NET PROVIDER OF SECURITY IN INDIAN OCEAN REGION (IOR) – A ROAD MAP".

First	IC – 67907 A Maj SK Misra AMS – 2 C, MS Branch IHQ of MoD (Army) DHQ PO New Delhi – 110 011 Email:saurabhmisra26@gmail.com Mob No : 99583 64437	Gold Medal, Cash Award of Rs.15,000/- and entry accepted for publication.
Second	IC – 69587 P Lt Col Dhiraj Kumar 203 Engr Regt (Attending DSSC – 74 Course) Qtr No 17 / 1, Wellington Hall, DSSC, Wellington, Nilgiris–643231 (Tamil Nadu) Email : nipadhiraj09@gmail.com	Cash award of Rs.10,000/- and entry accepted for publication.