

CENTRE FOR ADVANCED STRATEGIC STUDIES

The Centre for Advanced Strategic Studies (CASS), Pune was registered on 21st September, 1992 under the Society's Registration Act, 1860, and as a Charitable Public Trust on 28th October, 1992, under the Bombay Charitable Public Trust Act of 1950. The Department of Scientific and Industrial Research, Ministry of Science and Technology, Government of India has accorded recognition to the Centre as a Scientific and Industrial Research Institution. The Centre has also been granted exemption U/S 80G of the Income Tax Act, 1961, which gives fifty percent exemption to the donors.

The Centre aims at undertaking research and analysis of subjects relating to national and international security and development through seminars, discussions, publications at periodical intervals and close interaction with the faculty members and research students in allied disciplines in the Universities and Educational Institutions as well as the Armed Forces. In the coming future, the Centre expects to award research fellowships for studies in various areas of National Security and National Development. It aims to generate and promote interest among the academicians and public in related subjects, with a view to increase awareness to national security concerns. It has received very valuable support from the University of Pune in all its activities, especially from the Department of Defence and Strategic Studies. It has a Memorandum of Understanding (MOU) with Yashwantrao Chavan Academy of Development Administration (YASHADA), Pune for enabling mutual collaboration in the academic activities. The Centre has held a number of seminars, panel and group discussions in the past. The Centre has also embarked on publishing a Quarterly Journal with effect from January 2014.

ADDRESS:

Centre for Advanced Strategic Studies
M.M.D.W. Potdar Complex,
Savitribai Phule Pune University Campus,
Pune – 411 007
Telefax No.: 020-25697516
Email: casspune@yahoo.com / director@cfass.org.in
Website: www.cfass.org.in

EDITORIAL BOARD

- Air Marshal BN Gokhale, PVSM, AVSM, VM, (Retd) Editor-in-Chief.
- Lt Gen Amitava Mukherjee, PVSM, AVSM, (Retd) Former Director General, Air Defence, Army Headquarters.
- Prof Amitav Mallik, Former, Member, National Security Advisory Board and Founder Director, LASTEC, Delhi.
- Shri Jayant Y Umranikar (Retd) DGP (Spl Ops) Maharashtra and Former Commissioner of Police, Pune
- Vice Admiral DSP Varma, PVSM, AVSM, VSM, (Retd) Advisor, DRDO, Pune.
- Lt Gen KT Parnaik, PVSM, UYSM, USM, (Retd) Former G.O.C.-in-C, Northern Command.
- Shri Nitin Gokhale, Security and Strategic Affairs Editor NDTV, New Delhi

© Centre for Advanced Strategic Studies, Pune.

Edited by
Centre for Advanced Strategic Studies
M.M.D.W. Potdar Complex,
Savitribai Phule Pune University Campus,
Pune – 411 007
Telefax No.: 020-25697516
E-mail: casspune@yahoo.com
director@cfass.org.in
Website: www.cfass.org.in

Submission and permission-related queries can be sent to the Editor, Centre for Advanced Strategic Studies at casspune@yahoo.com

Published in collaboration with
Menaka Prakashan
(Publication division of MediaNext)
2117, Sadashiv Peth,
Vijayanagar Colony,
Pune – 411 030, Maharashtra

Email: sales@menakaprakashan.com
Webstore: www.menakabooks.com

For subscriptions: 9823 69 69 60

Printed at:
Vikram Printers, Parvati,
Pune – 411009

All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, recording or otherwise without the prior permission of the copyright holder.

Disclaimer: Articles are contributed by CASS for no commercial consideration. The views expressed in this journal are those of the authors and do not reflect the views of the Centre, those of any of the Ministries or any other organization, unless specifically stated as such.

Single issue price ₹ 400	Annual Subscription ₹ 2000 (Includes postage)	Please turn to last page for subscription form. To subscribe online, please visit www.menakabooks.com
-----------------------------	---	---

Founder Members

- Late Shri PVR Rao, Former Defence Secretary, Government of India.
- Late Shri RD Sathe, Former Foreign Secretary, Government of India.
- Late Prof VG Bhide, Former Vice Chancellor, Savitribai Phule Pune University
- Late Air Marshal YV Malse, (Retd) Former Vice Chief of the Air Staff.
- Late Shri Sharad Marathe, Former Industries Secretary, Government of India.
- Admiral JG Nadkarni, PVSM, AVSM, NM, VSM, (Retd) Former Chief of the Naval Staff.
- Professor Gautam Sen, Former Head, Department of Defence and Strategic Studies, University of Pune.

Honorary Life Members

- Shri Abhay Firodia, Chairman, Force Motors Ltd.
- Shri Atul C Kirloskar, Chairman and Managing Director, Kirloskar Oil Engines Ltd.
- Shri RD Pradhan, IAS (Retd), Former Home Secretary and Governor, Arunachal Pradesh.

Governing Council Members

- Shri MK Mangalmurti, IFS (Retd), Former High Commissioner, South Africa. Current Chairman, Centre for Advanced Strategic Studies, Pune.
- Admiral JG Nadkarni, PVSM, AVSM, NM, VSM, (Retd) Former Chief of the Naval Staff, IN.
- Air Chief Marshal PV Naik, PVSM, AVSM, (Retd) Former Chief of the Air Staff, IAF.
- Dr. Madhav Godbole, IAS (Retd), Former Home Secretary, Government of India.
- Professor Gautam Sen, Former Director General and Member Board of Trustees, Indian Institute of Education.
- Lt Gen Amitava Mukherjee, PVSM, AVSM, (Retd) Former Director General, Air Defence, Army Headquarters.
- Lt Gen KT Parnaik, PVSM, UYSM, USM, (Retd) Former G.O.C.-in-C, Northern Command.
- Air Marshal BN Gokhale, PVSM, AVSM, VM, (Retd) Former Vice Chief of the Air Staff, Air Headquarters, Presently Consultant, Principle Scientific Advisor, Government of India and DRDO and the current Director, Centre for Advanced Strategic Studies, Pune.



CASS Journal

Volume 2, No. 2, April–June 2015

Contents

<i>Editor's Note</i>	vii
1. Geography of India in the India Ocean, Its Disconnect with India's Maritime History, Lessons it has for India in 2015 and Beyond <i>Vice Admiral MP Awati (Retd)</i>	9
2. The Riddle of Crude Oil Pricing Price war, economics or geopolitics <i>Maj Gen SCN Jatar (Retd)</i>	29
3. Sino-Indian Border Dispute: Deterring the Dragon!! <i>Air Marshal V.K. Bhatia (Retd)</i>	41
4. Threat of Islamic Extremism to India <i>Air Marshal Anil Trikha (Retd)</i>	61
5. The First World War – A Soldier's Perspective <i>Major General Shashikant Pitre (Retd)</i>	69
6. Sri Lanka – The Past Is Ever Present <i>Brigadier R.R. Palsokar (Retd.)</i>	85
7. Second Line Of Defence <i>Captain S.V. Subbedar</i>	103
8. Economic Development and National security: Some Conceptual Reflections <i>Dr Pradeep Apte</i>	111
9. Anatomy of Make-in-India in the defence sector <i>Amit Cowshish</i>	123
10. Indian Defence Economy and National Security: Nuances, Challenges and Opportunities for the Defence Industry <i>Air Marshal M Matheswaran (Retd)</i>	137
<i>Guidelines for Contributors</i>	158





Air Marshal BN Gokhale (Retd)
PVSM, AVSM, VM
Director, CASS



Centre for Advanced Strategic Studies
Savitribai Phule Pune University Campus
Ganeshkhind Road
Pune 411 007, INDIA

Editor's Note

“The First World War killed fewer victims than the Second World War, destroyed fewer buildings, and uprooted millions instead of tens of millions – but in many ways it left even deeper scars both on the mind and on the map of Europe. The old world never recovered from the shock”.

Edmond Taylor
“The Fossil Monarchies”

The CASS Quarterly Journal continues in its pursuit of bringing out scholarly articles written by experts from diverse fields. CASS has been fortunate in receiving encouraging response from such experts in turn enriching the collection of articles. This issue of April 2015 is therefore bound to garner even larger response from the readership.

There are articles on the important theme of ‘Make in India’ amplifying various nuances of this important National aim of making India indigenously stronger using innovative technology and reducing imports especially in the defence sector. The economic compulsions connected with stronger Defence spending have also been brought out in an article in this issue.

This year marks the 100th anniversary of the start of the First World War. More than 1.5 million Indian soldiers had taken part with almost 70,000 casualties. Their stories of valour make the younger generations proud. This

issue of CASS Journal carries an article on the First World War. It is said that the roots of Second World War were sown in this Great War. With situation getting worse in the Russo-Ukrainian theatre aggravated by reports of possible use of Nuclear weapons, the world is staring again at the revival of Cold War. Connected with this is the proxy war on the price of oil and hence the Journal carries an article on this important aspect.

The issue also carries an article on Sri Lanka, where result in the recent elections has brought about renewed synergy in India-Sri Lanka relations. Recent visit by the Indian Prime Minister has further paved the way for stronger ties. The increasing might of Chinese Air Force and growth of infrastructure in Tibet in particular is an area of concern, as highlighted in one of the articles.

With Middle East in turmoil due to the threat of ISIS, the repercussions are being felt the world over and Europe in particular. This issue carries an article on ISIS since India also needs to keep a close watch on its possible ideological spread into the country.

With a long coastline, India needs to harness the Maritime wealth apart from ensuring Coastal Security. There is a need to look afresh at the entire Maritime eco-system, both Naval and Merchant Marine. There are articles on this important area in this issue.

I thank you once again for the support and encouragement you all provide us in bringing out the CASS Journal.

Wishing you all Happy Reading

Jai Hind

20th March 2015



(Bhushan Gokhale)
Air Marshal (Retd)
Director, CASS

Geography of India in the India Ocean, Its Disconnect with India's Maritime History, Lessons it has for India in 2015 and Beyond

Vice Admiral MP Awati PVSM, VrC (Retd)

I am deeply honoured to be addressing such a distinguished gathering of scientists and citizens of this city of Pune, deservedly acknowledged in the country as an educational and scientific hub. I attended school here and passed into the DUFFRIN from that school in 1943. I took up a career at sea by a series of circumstances, accidents, if you like, not by design, which sent me, first, to a Training Ship in Bombay's Harbour Bay, thence to the then Royal Indian Navy to learn and master the business of defending the country from the sea. First, I had to get to know the sea in all its myriad moods, thoroughly, and be able to use this knowledge in all weather while sailing. Luck and circumstance combined to choose for me a wonderful apprenticeship to achieve that, a cadetship, early training, with the British Royal Navy, unquestionably the best, the most accomplished, capable navy in the world at the time, albeit on the threshold of handing over the baton to the navy of the United States of America. You could say that I learnt my ropes, knots and splices, in the Royal Navy of Britain. Those nearly four and a half years have stood the test of time for me, for a lifetime at sea, first as a member of the fledgling navy of an independent India, learning to work the instruments and

ISSN 2347-9191 print

© 2015 Centre for Advanced Strategic Studies

CASS Journal, Vol. 2, No. 2, April-June 2015, pp. 09-27

recognize the intricacies of maritime power, its constituents and their ramifications in a world, which was changing so radically and so rapidly in the immediate post war years, and later, in its higher ranks, making and guiding its policies.

When I look back upon those early years I realize how important they were to be for me as the founding years for an active naval career, pioneering the resurgence of a maritime India. The word Maritime stands for everything that concerns, has to do with the sea, life upon it, ships which sail, both mercantile and war, upon it, aircraft and devices which fly and operate over it and vehicles which are designed to operate beneath its surface, both covert and overt. In our century the word must also encompass the industries and enterprises which explore it, its deep depths, and its bottom, the crust of the earth beneath the bottom, to gain and enhance national wealth. It is an all encompassing, engrossing word which demands a truly national effort to relate it to a national strategy at sea, through a national maritime policy and a strategy to implement it. At this time and in this year India has neither. Suffice it to say here that we have been true innocents, ignoramuses or laggards at learning from our past. But how and why did this happen in a peninsula surrounded on its three sides by the sea?

Primarily a successful, a resurgent maritime India must ride on the back of its mercantile marine, simply because without a thriving merchant fleet engaged in carrying India's trade, and other countries' trade as well, across the oceans of the world, an Indian Navy is so much vacuous bombast, pursuing a purposeless existence of showing the flag in countries which are no fools in today's globalised world. In the words of the celebrated Portuguese nobleman and sailor-diplomat of the early sixteenth century, Tome Pires '... For it is trade, which ennobles nations'. The goods which constitute that trade are carried in ships built for the purpose, manned by professional seamen. Of both these, India could boast of a long ancestry going back centuries, to Meluha, around six thousand years ago, the region of the Indus delta and adjoining country in western India. The city civilizations of Meluha traded with Dilmun in the Gulf, with the Tigris-Euphrates Delta and Doab, with Mesopotamia, Urr of Zigurrat fame, Babylonia, using the grain and cotton surpluses, cloth woven therefrom, traded for what those other countries had to offer in return. The ships of Meluha were built of the Indus delta reed,

perfectly seaworthy for those short, coastal voyages. They were owned by the merchant class who knew of and practiced mutual insurance of cargo against the known perils of the medium, whose early ships of the trading world traversed. Some of the crew may have been armed against pirates. The masters and their mates would be conversant with coastal navigation, and been aware of the guiding heavenly bodies, their positions and the regularity of their movements across the heavens, to assist with navigation of these early trading sea voyages. It is generally accepted by maritime historians that India, especially that part which pioneered the city civilizations and their economies, was among the earliest humans to trade by sea as an institutional system of profitably disposing of accumulated surpluses from the produce of a very fertile land and of manufactures from the abundance, of cotton, especially. It is an interesting story, which must be told elsewhere. As years passed, ships, the vehicle of that trade by sea, improved in design, material and construction. Timber took the place of reed, the planks stitched together with twine made from coconut fiber. Cotton cloth was stitched into sails for propulsion with the help of wind, in place of oars and human muscle power. The whole gamut of transportation of goods across the sea took on a new momentum and a new meaning with the discovery of the near clockwork regularity of the Monsoons, allegedly by a Greek navigator of the North Indian Ocean. Be that as it may, we Indians hewere certainly among the first Ancient Mariners. The practitioners of this seaborne trading enterprise of ancient, Pre Vedic India, became known in the four corners of the North Indian Ocean. It is truly an elevating story of early entrepreneurial, trading, maritime India.

The picture changes radically a couple of thousand years later upon the arrival on the scene of the Aryans. They are supposed to have streamed into the northern subcontinent from somewhere in Central Asia from as far north as the Arctic Circle, to spread across the Indus valley. The jury is still out on whether these lighter skinned, sharp nosed, broad browed people did invade the country from across its Himalayan borders, from Central Asia or from further north, perhaps the Arctic zone, or whether they were essentially a sub-continental people, locked away in its northern reaches, come south in search of fresh pastures for their bovine herds. One day we will have the verdict. But for now, these northern people, physically bigger and stronger than those they encountered in the Indus

basin, accompanied by their herds and riding chariots drawn by horse, were, indeed the invaders. They brought with them their own, pastoral, essentially continental, religion of the nomad grazier. We know it as the Vedic religion, ensconced in the four Vedas commenting on their philosophy of life on earth constructed around their numerous gods and their consorts. I invite my listeners to read B.G. Tilak's tome, *The Arctic Home in the Vedas*, first published in Pune in March 1903 if they wish to know more about these Aryans and their religion. The relatively simple minded denizens of the Indus city civilization, their maritime civilization already under threat, declining in the wake of a couple of hundred years of poor and reducing rainfall, leading to long years of drought, seemed powerless before this northern host, confronted with ever declining production of grain and cotton over consumption at home, for export. Their way of life was in a desperate situation. They were overawed by these new people from the north, the so called Aryans. They succumbed without a struggle, more or less, leaving the country to be Aryanised. The Vedic religion spread southwards, river valley by river valley, the darker Dasyus moving south before the lighter skinned host. Most were assimilated in the process of conquest. As true of all conquests in history, they were given a subordinate place and status in the scheme of things. It is a story which is outside the scope of this address. Suffice it to say here that the new order was not a sea friendly one. It was essentially of a 'continental mindset', where the sea as a carrier of trade remained in the background, not in the forefront of an economic activity, as it had been in the culture of the Indus Valley people. Early maritime, pre Vedic India, of the Indus people had definitely passed on in favour of a new society which looked at the seas surroundings their home with a new outlook which was, for long, to remain, essentially continental until rediscovered some millennia later by the British archaeologist, Sir Mortimer Wheeler, in 1946. He dug up and laid before an astonished world, the maritime civilization of Mohenjo-daro in the Indus delta, thousands of years prior to the subcontinent's acquaintance with the Vedic culture, its Varnashrama Dharma and its caste based society. Post 1947 we know a great deal more about this Indus-Harappan culture built upon the riches of an active maritime trade with neighbouring civilizations of west Asia. The people and the civilization which replaced this maritime order were a continental people scarcely aware of the sea, leave alone as a pathway of

trade. Some argue that words like Sagar, Sindhu in the language of the newcomers to mean the sea, prove otherwise. The Rig Veda, in my view, which I have gleaned from noted historians, did not know the sea. It knew the riverine world, of the wide rivers of north India and the words refer to them. They became synonymous with the sea as the new world of the Aryans eventually came to view the boundless sea as it pushed further south into peninsular India, the sea which had once fathered the maritime world of Meluha.

The intruding Vedic Aryans subscribed to a faith based on a person's colour of skin, superiority of fair over dark, as I have already conjectured. Their sage Manu in his Smriti, institutionalized the Varnashrama Dharm,a classifying the community into Jatis, the Brahmana at the top, given the task of guardianship of the Vedas, the Aranyakas and the Upanishads and a whole gamut of religious, philosophical and spiritual literature which had grown around the core texts written in Sanskrit. They had by this fiat the right to learn the three Rs and were said to have been reborn at the time of the Upanayana ceremony around the age of eight. The next in order were the Kshatriyas with their duty cut out in defending the faith and the society. They were permitted to bear arms in the performance of this duty. The next in order, the Vaishyas were the keepers of the society's books of accounts, they looked after its logistics and its economy, were entrusted with providing the wherewithal through their commercial and trading acumen and enterprise. The last in the caste ladder cake the Shudras, required to be the hewers of wood and drawers of water for their caste superiors in society. Those outside this framework of caste were the Outcastes which only task was to clean up what was left behind by their caste superiors and brethren, if they could be called brethren. In fact those within the caste structure were anything but caring or compassionate towards the poor Outcastes. They had a miserable time making both ends meet, let alone live with any dignity, even a touch of it. This same Manusmriti, forbids any kind of relationship, whatsoever, between castes. Inter caste marriages were forbidden, so was sharing of food and water. Pollution and Purity were the two watch words in this set up established and practiced by the new Aryanised society. I do not have to tell this audience the tiresome, yearlong purification mumbo jumbo the Lokmanya had to subject himself to, to be readmitted to his caste when he returned home from London after

attending the First Round Table Conference on Indian self rule. That happened barely a century ago! Imagine then the fate of those whom the Aryans had subdued in their intrusive conquest. Imagine, too, those who sailed the ships of trade which had brought so much prosperity and wealth to the former city states. To the newcomers the sea was a totally unknown entity and therefore a prohibited arena for humans to range upon. The people who sailed it in ships were Outcastes. Soon enough one of the religious pontiffs proscribed the sea altogether on the pain of losing one's caste. In a caste ridden society where one guarded one's caste with one's life, this had the desired effect. The sea was left alone, to be ventured upon only by those Outcastes who would otherwise starve, who were outside of caste, anyway. India and Indians lost their touch with the seas around them with the most profound effect on their lives, their history and their destiny. Regrettably, a good deal more than traces of the sea unfriendly attitude continues to remain even today. I can say with a good deal of authority that a normal middle class, upper caste couple in our society is not too keen to allow its only male child to seek a career at sea ! The sea is best left to the hereditary, usually illiterate, seafaring, usually Outcaste communities. The scene is changing, but it is changing at a snail's pace. That, ladies and gentlemen, is the truth and those who deny it are running away from moving India into the contemporary era. The point of relating this, the sad hold that caste and religion continue to have on modern Indian society is to tell you the damage it has done to our relations with the sea, which surrounds us on three sides. Not so long ago the coastal principalities which rule the littoral on the west coast preferred to appoint an Arab rather than one of their subjects to be port officers. These Shah Bandars were especially brought over from Oman and elsewhere in Arabia to superintend the administration of our ports, by our own rulers who had no confidence in the sea related abilities of their own people! Could there be a more telling example of our disconnect with the sea and sea related business and activities? They had simply atrophied through long disuse. The almost complete ignorance of the national printed and visual media over the recent solo circumnavigations by two Indians, almost one in the wake of the other, between 2009 and 2013, is a glaring example of a national wish to blank the seas off from the nation's consciousness. We will avidly read about cricket, about Bollywood and its myriad foibles but will scarcely wish to

understand what a circumnavigation of the globe, in an open sailing boat is all about, what it takes to do it, solo, over all the seven seas of the world, in an open boat using only the wind to propel the boat, over 40,000 km! That is the sum total of modern India's self inflicted tragedy. As I will tell you in the remaining part of this address, it is the fountainhead of our disconnect with our geography, our near abysmal history at sea, with the vast watery two thirds of the earth's surface, lapping our shores. It is an unsurpassed tragedy for a people who have been conditioned to ignore, even to fear, the wide salt water expanse which surrounds them, which brings them the trusty seasonal rains, Monsoons, needed to sustain them and ensures that they continue to live, even prosper by the trade which passes over it. Without the seas which surround us, there would be no Monsoons, no agriculture and therefore no Indian economy to speak of.

MAP OF MARITIME INDIA



Ladies and Gentlemen, Benjamin Disraeli once mocked his political opponent and rival, Gladstone with a remark, 'My Right Honourable friend knows that there are lies, damn lies and statistics', during a debate in parliament over the success of the latter's government's claims to

progress in social indices during his government when he, Gladstone, was in power. I am going to inflict some statistics on my audience to highlight the progress or a lack of it in India's mercantile fleet, a prime mover in India's maritime status, in the past few years. As I emphasized at the very beginning of this address, a country's trade by sea carried in its ships is the reason for the existence of a navy to protect it, and with it, its trading partners, in times of difficulties and in war. Basically, there is no other reason for a country to fund and raise a navy of its own. It could rely on someone else's naval power as indeed India did, or had made do, for centuries, under protection of other navies. Of course we had to pay a price for that History tells us the resultant tragedy for India, her seaborne trade and her standing among the seafaring nations of the world. Admittedly, a navy is an expensive undertaking, it takes a long time to build a credible one and even longer to sustain it over a period of time, usually centuries. If a country's commercial navy is one part of its maritime power, its navy is the other, perhaps not wholly but in a big measure, as I have mentioned earlier. Being an expensive entity to sustain, the navy has to be backed by a flourishing economy which itself must rely on its international trade and a myriad other economic activities to enrich itself of which this audience is aware. Let me then table a few statistics before you relating to the contemporary Indian Mercantile Marine. The figures are for 2012. They are quoted in their world context, not to impress you, rather to make you wonder in disbelief, disbelief that a country touted as a great maritime power by its political class, should be so backward in the carriage of its seaborne trade. Our seaborne trade is more than ninety percent of our overseas trade which fetches us valuable foreign exchange, foreign currency, to keep our economy humming and healthy. Of the total world trade of something like ten billion tons, India's share is 755 million tons. For a country of India's size, of her climatic and soil variations, which convert into our potential in agricultural and industrial output greatly in excess of our domestic needs and therefore for export of goods and services, this is a ridiculously insignificant tonnage. Compare it to China's nearly five billion tons. Of our seaborne trade 670 million tons or eighty percent, is carried in foreign bottoms. Indian bottoms carry only 82 million tons or eleven per cent. Why this glaring gap between what we carry ourselves for ourselves and which others carry for us? It is because

after almost seventy years of sovereign independent existence as a nation state, our mercantile tonnage has remained stagnant at about ten and a half million tons, enough only to carry eleven percent of our seaborne trade. Simple but telling statistics! With another dose of statistics let me tell my distinguished audience that for an increase by every ten per cent in carriage of our cargo in our own ships, the country would save an outflow in foreign exchange of five and a half billion U.S. dollars. And why has Indian mercantile marine tonnage remained stagnant when China which started well behind us in 1949 has now leaped to ten times the Indian tonnage? The answer stares us in the face and does not have to be spelt out to an audience like this one. Regrettably, I see no dawn just below the horizon. The Indian ship owner is stymied by several ridiculous rules and regulations when he wishes to add to his tonnage through new buildings or through purchase. He can do neither without jumping over almost impossible obstacles placed in his way by a system and a government bureaucracy which thrives on the status quo, making laws and interpreting them to obstruct development and progress. Movement is anathema to our system. Movement upon the seas even more so, perhaps because of our inherent distrust of that fluid medium upon which ships must pass to trade with distant lands. We simply do not trust the sea; we are not comfortable with it. We believe, have long believed, that it is too dangerous, too unpredictable a medium to allow our ships with our people to sail upon it, even as thousands of Indian seamen man and sail other nations' ships. The predictable, therefore, has happened, is happening and will continue to happen unless we Indians develop, even at this stage, a desire, a will to use the sea to our purpose, not allowing others to do for us that which we should be doing ourselves.

Indian sailors and seamen, stokers and engine room lascars, deck and marine engineer officers man and sail many foreign owned, foreign flag vessels for a profession as well as for good living. The sailor's profession is an honourable one, one which has a long, historical connection with the Indian psyche. Modern India has been loath to exploit this connection. The reasons may vary from plain fear of the sea, long absences from home and family in a civilization which holds both dear, to a simple preference to a static, nine to five life style. Young India may be changing but not fast enough for a world which is changing much faster. The sea demands people who are ready to face the unexpected, to face and thrive

on hard work in unpredictable circumstances, who will take a ship to Hades, if necessary, and bring her back home, safe and sound, with her cargo sold for a profit. Those were the sailors who set out to trade, in their flimsy craft, from these very shores six thousand years ago, brought immense riches to the country from their enterprise. We could cash in on the immense demand abroad for Indian seamen to man ships of many nations. We could multiply by at least a hundred, the establishments, schools, both government and private, which are providing sea going personnel to man the ever increasing mercantile tonnage of the world without touching bottom, its demand for officers and crew. We have inherent advantages in both ability and language. The great, overweening disadvantage is the lack of imagination for enterprise, for doing things out of the box, among those who craft and direct India in the maritime domain. We are governed by those who scarcely understand the sea, the folly of ignoring it, who seem forever highlighting accidents which happen to our ships which endanger personnel who man them. I would say to such chicken hearted people that if you do not wish for accidents to happen at sea, it is best you keep your ships and personnel in harbor, as you have done all these years, boasting the while of India's great maritime past and heritage, of her ships and seamen. I have personal experience of this mindset. It took me twenty years to persuade both the Navy and the government to let an Indian sail around the world, solo, in an Indian built sailing boat, a feat performed many times over by European, American and Australian yachtsmen. Friendships, closeness to the sea do not come cheap or through boasting about your once-upon-a-time prowess upon it. You have to work for it, use the sea for recreation which will in course of time, improve your seamanship, sea mindedness and connectivity with the watery expanse which surrounds us on three sides.

Let me now take you round the desolation which our ports and harbours have become since independence. The story is of a piece of the general neglect of our maritime assets. Those who govern us scarcely understand the importance and the value of the seas which have been behind our prosperity for ages through trade ships which pass over them they know no better through ignorance of history. Once upon a time our ports were the destinations of the great sea trading communities bordering the Arabian Sea, the Persian Gulf, or Red Sea and Egypt, the

near Mediterranean as far west as Athens and Rome who sent back to us cargoes and gold in payment of what they received from us, grain, cotton cloth, spices, exotic birds and much else. These items were in great demand abroad, so were our timber built ships, timber from which they were built, especially teak, ship carpenters who built them. They all operated out of the once renowned ports and harbours along the Indian coasts. What has happened to them? Take the example of Mumbai that was Bombay until recently. Bombay Port had a thriving trade with hundreds of ships docking and sailing out with their holds full of cargo from ports all over the world and destined similarly. I recall, way back in 1944 as a cadet in the DUFFERIN, Bombay's Harbour Bay, chock full of over one hundred ships swinging at anchor awaiting to form a convoy to wherever. Bombay was a busy port for over a hundred years or more, had been given its north south docks along the east frontage of its iconic island, knitted up from seven separate islets. That was done by the British who had a concept for their Indian Empire and its maritime domain. We seem to be empty headed on that count. Today that same Bombay, now Mumbai is silting up, so fast that it requires huge effort and expense in maintenance dredging to keep reasonably deep navigation channels open to shipping. The draughts of ships which can use Bombay has successively decreased and now stands at a lowly twenty feet which bars the ever increasing size of merchants ships with draughts of thirty plus feet from using this once great port. Worldwide tonnage of ships has increased. There are now ships of 100,000 tons and more in regular use. They must by pass Mumbai, go to Colombo, the Arab Gulf ports, Singapore and other places which can take them. Mumbai loses trade and revenue which once enriched the city and it's Port Trust. With container trade the situation is even worse. Mumbai has become a satellite to the deep water container ports of the North Indian Ocean. This is attributable to successive port administrations which have ignored the geography of Mumbai port downstream of the Western Ghats and the mangrove mud flats along the many tidal creeks which border its northern limits. Every year the wanton deforestation of the Ghats and the destruction of the mangroves for use as fuel, have sent millions of tons of mud downstream, to deposit itself as silt in the Harbour Bay, reducing the depths available to shipping. There is continuous dredging during the fair season to maintain minimum depths. Over the years this problem has reduced

the importance of Mumbai Port. Similar conditions have to be faced and battled in almost all the west coast ports, to a lesser extent in the east. Our competitors at sea, in Asia, especially China, confronted and solved the problem of siltation through sensible hydrodynamic policies and port construction and maintenance which have been neglected or plainly evaded in India, by the government and its port administrators. We should have known better. In Mumbai, for example, the entrances to the docks built by the British during the late nineteenth and the early twentieth century's have south facing entrances, obviously to reduce the deposition of silt which strong ebbs brought down with them from the northern shores of the harbor. Since independence, docks and other facilities which have come up, have been given east or even north facing entrances, through, either faulty hydrodynamic models or worse, through an ignorance of the geography of the mainly north south orientation of the great Harbour Bay of Mumbai. I fear that in a generation or two Mumbai Port will not be usable by the big, deep draught ships of the trading nations, to become a modern version of Surat or Bharuch or the many once flourishing ports of the Gulf of Khambhat. It is indeed fortunate that, in the recent past, Gujarat has begun to do something about its ports, to make them navigable to deep draught ships of the trading world. Will other coastal states take a leaf out of Gujarat's recent example? We have to understand that friendly and efficient ports which can berth ships in all weather and turn them around quickly, to minimize costs, are an absolute must for a flourishing trade by sea of a country by. A country with a reputation for unsafe, inefficient ports will be bypassed by trade, adding to its costs of imports and exports leading, eventually, to its unviability as a trading partner. Most regrettably, Mumbai is fast approaching that stage of safety and competence in handling ships and cargoes.

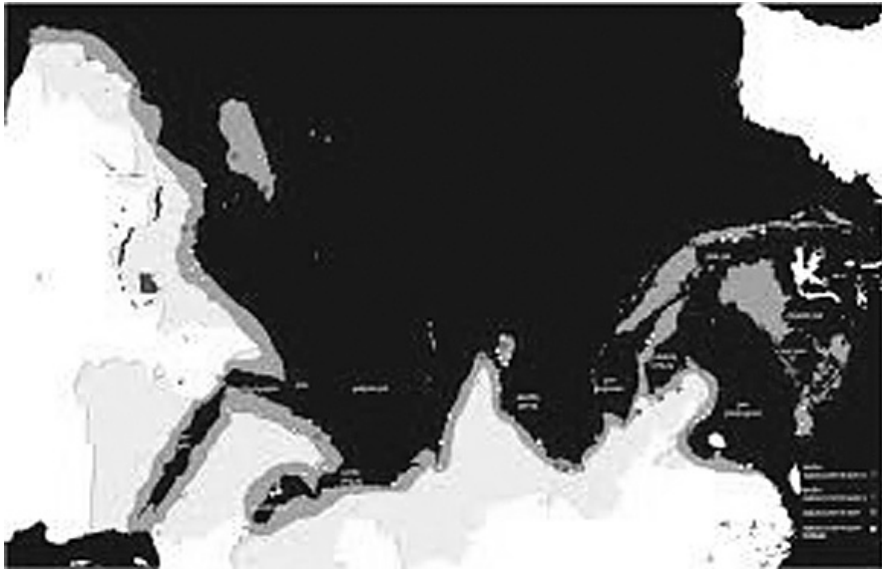
While on this subject let me tell my audience of our fears of China acquiring port and other facilities in the North Indian Ocean to trump India at sea, China's so called 'String of Pearls' across the North Indian Ocean. Much is made of this in the media. China's very long line of sea communications past India to its east coast makes these so called pearls vulnerable to interdiction. Personally, I do not believe that China would wish a conflict with India which may lead to a war at sea. She has greater interest in harmonizing her relations with India. Her strategy is to keep

India on its toes through helping the Pakistan Navy to strengthen itself in her underwater capability to keep a stronger, all dimensions Indian fleet from looking outside its compound. So far that strategy seems to have worked, abetted by our inability to expand our submarine fleet in a meaningful way. More of that in a while.

The maritime gap between China and India is already massive and increasing by the year. As one reporter says, out of the top ten busiest container ports in the world, China has seven. Our Jawaharlal Nehru Container Port Terminal (JNPT) is placed at number thirty. It is the only one in the list of top fifty. I have already spoken about the tonnage and shipbuilding comparisons between India and China. The new government must now focus on the entire peninsular India, its northern continental reaches to convert India into a huge maritime trading giant based on its immense agricultural and manufacturing potential, as did the ancient Indian maritime city state of Meluha. It is often said that history repeats itself. Here is an opportunity for India to repeat its once astonishing history at sea as a great trading nation. Let the concept of 'Sagar Mala' pronounced as a policy earlier be resuscitated. It could well be the opening salvo of revitalizing the country's doddering port infrastructure, revitalizing India's maritime trade. A rapid increase in the country's shipping tonnage will inevitably follow. If these things happen in my life time, I will say that maritime India is once again on the march.

There is a disconnect today between Maritime India and Indian Science and Technology. India's ascendancy upon the sea can only be with the help of science and technology. Our scientific endeavour, such as it is, the resultant technological advance, has barely kept pace with the advanced world of the West and lately of China. Each year sees the gap increase. Perhaps our system of education is at fault. I am no one to pronounce upon it. But I see the proof in the pudding. Ocean Sciences have not established a firm footing in India. I will not risk a technological forecast of ocean research and development but I can tell this audience of eminent people that we have not reached a status of eminence in oceanographic research, in bathymetric, bathy thermal research work which will influence ocean technology, the ability of a country to use the ocean's resources to a national purpose. I may be wrong but I do not think that there are many universities in India which

teach marine sciences and fund research in related technologies which will promote India's presence at sea. We all read last year that China had sent an oceanographic ship to the Southern Ocean off the west coast of Australia to map the sea bed in a bid to search for the missing Malaysian Airline flight MH370. The Chinese also have the capability to send an unmanned deep sea submersible craft to depths in excess of fifteen thousand feet. Only three or four other nations in the world have comparable ability. To put it the other way round, China, in a short span of a few years, has mastered the technology of unmanned deep diving craft. Imagine the water pressures at those depths! In contrast we do not even have a Submarine Rescue Vessel. We started designing and building state of the art, stealth warship hulls. We have many such warships in commission. Without exception though these ships of the Indian Navy mount imported weapon systems, at enormous cost. Our Defence and Research Organisation, DRDO, has not produced a single advanced weapons system since its founding more than half a century ago, in spite of being well funded. It is still struggling to give the navy missile systems which have long been dated in the leading navies of the world. We have to look for them in places like Israel, set up joint ventures with them because we cannot manufacture these threshold technology systems on our own. That I believe is a poor commentary on the scientific and technology community in the country. Yet the Indian Space Research Organisation, ISRO, has a Mars probe in working order. Thirty six per cent of NASA's scientists are Indians working in and for USA. Now is that not a commentary on our system of education and on our Science and Technology? In the world's maritime domain India is now in the danger of being relegated to the 'Has Been' rather than among those who 'Will Be'. Just look at the map of the North Indian Ocean, upside down.



Upside Down Map

The geography must immediately strike the viewer, the almost domineering position of India over those seas, seas which carry such huge trade from the west to the east, to China, especially. This has always been the case in history and those who understood the picture stayed on to rule, to enrich themselves, their far off countries, at our expense. Once again I will caution that history may, indeed will, repeat itself if India will not wake up to the demands of her geography astride her ocean, get into the act of repairing the voids, establish a writ where she will be a player in the maritime world by connecting with it rather than remain an onlooker. The disconnect between geography and history has to be repaired, and quickly, before someone else steps into the gap, into the hiatus to capture India's God given status as a maritime giant. That giant has to grow some muscle. A flabby giant is an invitation to Lilliputs, with sharp nails, to bleed the Gulliver into submission. In this century Indians must realize where their redemption, their future lies. It lies at sea as surely as I stand before you.

Finally, Ladies and Gentlemen, I come to the trigger which was, at least I think so, behind the invitation from Vidnyan Bharati to come here

to speak to you on this day. I believe it was my write up in the Sunday LOKMAT, magazine edition MANTHAN of 09 March commenting on the series of accidents aboard ships of the navy, including three Kilo class submarines, almost one after another, and my critique on the civil military relations. Those relations have declined spectacularly in the past few years, most regrettably. In a democracy the military accepts subservience to the political leadership which has been put into place through a process of elections every five years, some times less. For the Profession of Arms this acceptance of civil supervision does not mean subservience to a bureaucracy to what we, in the military, derisively call Babus. Increasingly and once again regrettably the Babus have successfully placed themselves between the soldier and the politician. It is they who seem to be running the show. Their authority does not stem from responsibility. It is a one way traffic. The political leadership has simply abandoned its responsibility to govern, certainly as far as the military is concerned. The reason is that very, very few politicians in India understand military, strategic affairs. Even fewer are well read on military subjects, on military history on what motivates a volunteer army, on what is meant by a Revolution in Military Affairs, a recent coinage. As a result they are loathe to meet the country's military leaders as they would, do as a matter of course, in other democratic dispensations. This continuous interaction, a dialogue, between a democratic society's politicians and its military ensures building of confidence and trust between these two important pillars of the society for credible security both internal and external. The defence forces are nothing more nor less than a society's instrument of application of legitimate and controlled violence in furtherance of its own security, its national aims. In India this healthy dialogue has been allowed to lapse. Bureaucracy is as much a servant of a democratic society as it's military. Unfortunately, our bureaucracy has usurped the function of the politician. The politician has allowed it to, to ease his own burden or to wash his hands of responsibility, holding on only to his right. As the recent elections have shown beyond a shadow of doubt, this will no longer do. In my article referred to above, I have described my own experience in better days, more than thirty years ago when the Prime Minister was easily accessible to the senior military officers. Happier days, without doubt. I am glad that the new Government at the Centre has revived some of these traditional meetings with the

Service Chiefs.

I finally come to accidents in warships at sea and in harbor. Our media makes avoidable fuss over such mishaps. There is a brotherhood of the sea among those who choose it for a career, which recognizes as common enemy, the sea itself. The sea is a very hard task master. The margin for error in a ship between safety and accident is small. You learn through experience of keeping a ship in all weather. In a warship the margin is even less. There are weapon systems which are intolerant of both dirt and disturbance procedures. Either will lead to an accident usually bloody, often fatal. You have to know precisely about your task in handling your ship and the weapon systems it is fitted with. The sea will not permit errors in the former and the designer will not allow slippage in handling the latter without exacting a price, usually a costly one. If you do not wish for accidents, you had better remain in harbor. You are not paid to do that. You must take your ship or your submarine to sea as often as you can to be able to fight it effectively in combat. In the navy you are first a seaman then whatever else you are trained for in combat. You have to understand that old enemy, the sea, in all its moods and then be able to successfully fight her in combat against the country's enemies at sea who will attempt to intercept and then destroy your trade to bring you to your knees. It is and has always been a simple proposition on which great nations have organized and built their sea power. History gives us ample proof that a country cannot reach great Power status without first achieving power at sea through its maritime agencies, a Navy being only the first of those agencies of a maritime nation.

Thank you and Jai Hind!

(** Based on Talk Delivered by Vice Admiral M.P. Awati in Pune on Saturday, 24 May 2014 before Members of Vidnyan Bharati and Others)

VICE ADMIRAL MANOHAR PRALHAD AWATI PVSM, VRC



Vice admiral MP Awati is a renowned former Naval Officer, nature lover and a sailor of repute who has contributed his full might to the defense of the country and the preservation of Nature.

Born on 07 September 1927, Admiral Awati had his schooling in King George's School, Mumbai and The Maharashtra Education Society School, Pune. Having attended TS Dufferin, he was selected for the Royal Indian navy (RIN) in November 1945. After his training at the Royal Naval Colleges at Dartsmouth and Greenwich, Admiral Awati also had training stints with the British Mediterranean Fleet and the Naval Specialist School at Portsmouth.

In March 1950, Admiral Awati returned to India for active service in the Indian Navy. A specialist in Signals Communication, Admiral Awati served on IN Ships, Ranjit, Venduruthy, Delhi and Kistna, and later commanded IN Ships Betwa, Tir and Mysore. As the Commanding Officer of INS Kamorta during the 1971 Bangla Desh Liberation war, he was awarded the Vir Chakra for leadership and gallantry. His sailing career reached its height with the command of the sword arm of the Indian Navy, the Western Fleet. An alumnus of the Defense Services Staff College Wellington, and the Royal College of Defense Studies, London, Admiral Awati subsequently held crucial shore appointments such as Commandant of the National Defense Academy (NDA), Chief of Personnel at the Naval Headquarters and Flag officer Commanding-in-Chief of the Western Naval Command from where he retired in March 1983.

A recipient of Param Vishishta Seva Medal (PVSM), Admiral Awati was the chairman of the Asian Games (1982) Yachting Organizing Committee. Admiral. Awati's love for ecology and its conservation emerged after retirement from active service in association with the legendary Dr Salim Ali. His particular love for the conservation of the Lion and the Tiger, was reflected in the books he edited -- Homo Sapiens and Panthera Leo and The Vanishing Indian Tiger. Nature Clubs of India is yet another contribution of Admiral. Awati.

Besides being the Vice President of Blitz Publications and President Tolani Shipping Company, Admiral Awati's most significant post-

retirement venture was the conception and founding of the Maritime History Society of India, a unique institution which sustains all of maritime research in the country today. His love for the Sea also took him to the coasts of India in search of the Timber Shipbuilding Industry.

'Sagarparikrama' (August 2009 to May 2010) which took the first Indian Solo circumnavigator around the world in an Indian built boat, MHADEI, is the single most ambitious sea-farer's project in the history of modern India. The project was altogether Admiral. Awati's brain-child and a tribute to his perseverance of nearly two decades.

For a sailor to be an ornithologist and wild-life conservationist is an amazingly amphibian feat. Admiral. Awati's varied interests and contribution make him more than amazing.



The Riddle of Crude Oil Pricing Price war, economics or geopolitics?

Maj Gen SCN Jatar (Retd)
Former CMD, Oil India Ltd

INTRODUCTION

As we go along analysing each factor, we realise that most of the factors that go into determining the market price of crude oil are at play most of the time; some pulling the price up, some pulling it down! The factors are briefly:

- a. Oversupply & Slackening Demand Lowered Crude Prices.
- b. High Cost of Unconventional Oil
- c. Strategic Environment, Geopolitics, Instability & Market Sentiment.
- d. The so-called Free Market in Oil Trading.
- e. The Price & Market Share War.

OVERSUPPLY & SLACKENING DEMAND LOWERED CRUDE PRICES

The long term, 20-year average is, in today's money (adjusting for inflation), about \$US60 a bbl. The average for last three years has been \$100 a bbl with a steep downfall of crude prices from \$115 a barrel in mid-June to \$50 by early-January 2015. It wasn't that long ago that the Opec was targeting \$US25 oil, which back then seemed a comparatively high price. Be that as it may, for 15 years prior to the turn of the century

ISSN 2347-9191 print

© 2015 Centre for Advanced Strategic Studies

CASS Journal, Vol. 2, No. 2, April-June 2015, pp. 29-39

Brent traded at around the \$US20 mark in nominal terms¹. Then how come the analysts started calling \$100 as the normal price?

A price fall normally boosts GDP by shifting resources from producers to consumers, who are more likely to spend their gains than wealthy sheikhdoms. An IMF rule of thumb has it that a \$20 drop in the oil price adds about 0.4 percentage points to global growth.² Statistically, oil demand growth rate is about half that of world GDP growth rate. In reverse, decline in oil production drags down world GDP. The world's slowing economy, China's slackened appetite for raw materials and stalled recoveries in Europe and Japan, are reining back the demand for oil. Britain, the Euro zone and parts of Eastern Europe are still in recession, US economic engine is stuttering and China is hard landing.

The supply side is boosting up due to the addition of shale oil (3.5 MM bopd and oil from 2 MM bopd from Canadian oil sands). The world is thus faced with a situation where Opec does not reduce its production quotas with Saudi Arabia refusing to perform its role as the 'swing producer' capable of lowering or raising its output to stabilize crude's price. It is most unusual for Opec not to intervene in spite of pressures from member countries to keep oil prices high enough to balance their budgets. It looks the Saudis are again using oil as a political weapon.³ For the first time the mantra is, "Let the markets decide". Will then the most affected countries themselves unilaterally down their production to raise prices, especially Russia, Venezuela and Iran? Although more oil and less demand has resulted in a steep drop in oil prices, it is not market forces that are at play in reality as we shall see later.

The IMF has said that low oil prices can help cut energy subsidies worth \$2 trillion, which is a window of opportunity to trim energy subsidies and invest this amount in job creation and education. Low oil prices should be treated as "financial inclusion" ... and a lot of corruption can actually disappear.⁴

India will have large savings due to the drop in the price of crude.

-
1. Jeremy Warner, "Oil could fall to \$US20 over the coming year", 31/12/14, The Daily Telegraph, London
 2. "Cheaper Oil, Winners & Losers", The Economist, 25/10/14
 3. Andrew Scott Cooper, "Saudi's crashing the world market. Why?", 18/12/14, <http://foreignpolicy.com/2014/12/18/why-would-the-saudis-crash-oil-markets-iran/>
 4. PTI, "Low oil prices can help cut energy subsidies worth \$2 trillion, says IMF", 24 January 2015, <http://energy.economictimes.indiatimes.com/news/industry/wef-2015-low-oil-prices-can-help-cut-energy-subsidies-worth-2-trillion-says-imf/45999392>

India's petroleum product demand has reached nearly 3.7 million bbl per day (bbl/d), far above our roughly 1 million bbl/d of total liquids production. Taking \$100 per bbl as last three year's average price, India's import bill for 2.7 million bbl will drop from \$270 million to \$162 million for the current price of \$60 per bbl. India is thus saving \$108 million per day or \$39.42 billion per year. This comes to ₹2365 billion or ₹2.365 lakh crores per year. This is no small amount! But the operators of Indian oilfields being paid at international prices will lose tremendously.

HIGH COST OF UNCONVENTIONAL OIL

Conventional oil is liquid petroleum flowing naturally or by pumping without further processing while unconventional oil such as heavy oils, oil sands, tar sands are slow flowing, viscous & difficult to produce.

The only reliable way to recognize the timing of peak oil is by reflecting on past statistics. The most telling evidence that peaking of conventional crude oil has arrived is the near plateau and a negative growth in production for the seven years ending 2011. The advent of peaking of conventional oil and the increasing awareness about global warming necessitating reduction in emission of green house gas (GHG) have resulted in escalating costs for finding and producing unconventional oil, which has had a cascading adverse effect on the world economy. Importantly, there is great uncertainty about the future due to the high cost of producing unconventional oil because of varying and divergent forecasts of the life of conventional crude oil and whether there is on the horizon any substitute for this strategic liquid fuel, especially for transportation and security purposes. The type of oil has a direct bearing on its emission of GHG, requirement of water for production, ease of extraction and the level of technology needed both for exploration and production and in the ultimate analysis on the cost of production.

The cost of production and refining of heavy & extra-heavy oils is high because it can contain up to three times more carbon than conventional oil and high concentrations of sulphur and heavy metals. The cost of producing extra heavy oils is very high because they are dense, viscous, or even solid so that they cannot be pumped, and must be mined or liquefied underground in-situ. Bitumen is the petroleum component in oil sands. Hence, the need for oil sands to be pre-processed into synthetic

crude oil before refining.

“Oil shale” is a petroleum precursor that requires cooking to get the oil and natural gas out. Thus true “shale oil” is actually kerogen in ‘rich’ oil source rocks, which needs to be converted to crude oil by heating it to cracking temperatures. Technology for commercial use of this process is not yet designed. It contains even more carbon than heavy oil, and must be heated at a very high temperature to liberate. “Light Tight oil (LTO)”, on the other hand, is crude oil stored in shale and requires modern drilling and recovery techniques to get it out. Natural gas is also produced from shale deposits.

Unconventional oil emits up to 50 % more GHG than conventional oil and needs water at three barrels for every barrel of oil production. Fracking (hydraulic fracturing), which accompanies the production of LTO, causes damage to ground water, land and air due to a varied mix of chemicals used for it. Unconventional oil reserves are located in geologically unfriendly environments and are difficult to extract requiring sophisticated technology totting up the uncertainty and adding further to exploration costs.

The conventional oil fields of the world (which are dwindling in number as well as production totals) deplete at around a 5 per cent rate per year, with a 50 per cent recovery rate. The new fracking fields deplete at over 50 per cent in the very first year, and recover less than 10 per cent. This means that over 90 per cent of the tight oil freed by fracking and horizontal drilling is left behind. Supply is always available for the right price, but because of the manipulation of the past, no one really knows what the real price would be—until now. Typical production costs for a barrel of oil, taken from various sources are: Middle East \$27, Offshore Shelf \$41, Heavy Oil \$47, Onshore Russia \$51, Deep-water \$52, Ultra Deep-water \$56, North American Shale \$65, Oil Sands \$70, Arctic \$75.⁵

The cost of finding and producing unconventional oil is extremely high e.g. a deep oil well can cost around US\$75 million. As rising demand empties conventional oil, more and more unconventional oil comes into the

5. Jason Scheurer, “There is no peak oil-but we are approaching peak low-cost oil”, 8 February 2-15, <http://www.breitbart.com/big-government/2015/02/08/there-is-no-peak-oil-but-we-are-approaching-peak-low-cost-oil/>

market. According to Carnegie Foundation, unconventional oil becomes profitable at between \$40 & \$60 a barrel. However, Arthur Bremen says,⁶ “When we take the costs and realized oil and gas prices that the companies involved provide to the Securities and Exchange Commission in their 10-Qs, we get a break-even WTI price of \$80-85/barrel.”

A comparison of recoverable resources is useful: Conventional oil resource is 1860 billion bbls out of which 1063 are proved reserves. Its cost of production is between \$25-45 per bbl of oil equivalent (boe). Marginal resource such as deep water is 150 billion bbls out of which 50 is proved and its cost of production is \$55-80 per bbl of oil equivalent. LTO resource is 300 billion bbls out which is 150 proved with its cost of production between \$50-100 boe (Americas/Russia is less than \$80 boe). Oil Sands resource is 1222 billion bbls with 393 proved and a high cost of production at \$70-120 boe.⁷ Unconventional resource is thus 1672 billion bbls out of which 593 billion bbls is proved as against 1063 billion bbls of conventional proved reserves. Current production of LTO is 3.5 mm bopd and of oil sands is about 2 mm bopd i.e. about 6 mm bopd as against the total production of conventional oil of 86 mm bopd.

STRATEGIC ENVIRONMENT, GEOPOLITICS, INSTABILITY & MARKET SENTIMENT

Crude oil is sensitive to day-to-day changes in the global strategic environment. In early October 2014, the IMF looked at what might happen to the world economy if conflict in Iraq caused an oil-price shock. Fighters from Islamic State (IS) were pushing into the country's north and the Fund worried about a sharp price rise of 20% in a year. Global GDP would then fall by 0.5-1.5%. Equity prices in rich countries would decline by 3-7%, and inflation would be at least half a point higher. IS is still advancing. Russia, the world's third-biggest producer, is embroiled in Ukraine. Iraq, Syria, Nigeria and Libya, oil producers all, are in turmoil.⁸ But the price of

6. Arthur Breman, “The Real Cause Of Low Oil Prices: Interview With Arthur Berman”, 04/01/15, <http://oilprice.com/Interviews/The-Real-Cause-Of-Low-Oil-Prices-Interview-With-Arthur-Berman.html>

7. Source: Schlumberger Business Consulting 2014 for reserves and IEA forecasted oil price in 2035 for cost of production.

8. “Cheaper Oil, Winners & Losers”, *The Economist*, 25/10/14

Brent crude fell over 25% from \$115 a barrel in mid-June 2014 to under \$85 in mid-October and to \$ 55 by the end of December 2014.

IMF took two factors that affect crude pricing into account; instability in oil producing regions and market sentiments. As crude oil is a strategic commodity, geopolitical considerations weigh heavily in determining its price. While crude production does not entirely stop in disturbed areas, market sentiment pushes prices up or down. Even a mere statement by a prominent politician can send prices zooming up. E.g., Prices went to a record high by 9 % to \$139 on 08/06/2008 on a mere statement by an Israeli politician about attacking Iran.⁹ Again, oil prices were at a high of \$87 because of Iran, OPEC and the turmoil in Europe and then hit a low of \$81 on the same day 12/06/2012 after the Obama administration exempted six countries from sanctions over Iran and Saudi Arabia hinted at production increases.¹⁰ About \$5 to \$15 is the ‘terrorist’ premium at any given time.

Thus scarcity of crude oil can occur even if there are adequate supplies because of obstructions in its movement. For example, the time frame for lifting the blockade of the Strait of Hormuz, if it takes place, cannot be predicted. Hence, there are bound to be acute shortages of oil with attendant very high prices during the intervening period.

Iran and Russia are helping Assad’s regime in Syria while Riyadh is in direct confrontation with Iran. The Arab oil producers are trying to kill two disparate birds with one stone; Russia and Iran on one side and the US on the other.¹¹ Saudi Arabia wants low prices mainly to increase the suffering of Russia and Iran adding to the sanctions already underway. The value of the rubble has halved, and the economy has already slipped into recession.¹² In the bargain, if some US shale oil producers suffer, Saudis aren’t too sad (if not happy) because it kills competition although in the short term.

F. William Engdahl goes further in his article¹³ in the Centre for

9. Hanan Greenberg, Deputy defense minister slams Mofaz comments on Iran, 06/08/2008, <http://www.ynetnews.com/articles/0,7340,L-3553143,00.html>

10. Steves Hargreaves, “Oil prices swing amid economic, geopolitical uncertainty”, 12/06/12, <http://money.cnn.com/2012/06/12/investing/oil-prices>.

11. “Cheaper petroleum spells bad news for oil producers...”, Michael Klare, 23/10/14, <http://america.aljazeera.com/articles/2014/10/23/plunging-oil-priceschallengegeopoliticalenergyindustryassumption.html>

12. “Truth Behind the Oil War”, Arab News, By Gwynne Dyer, <http://www.eurasiareview.com/02012015-truth-behind-oil-war-oped/>

13. “The Secret Stupid Saudi-US Deal on Syria”, F. William Engdahl, 26/10/14, <http://>

Research on Globalisation of a secret and quite stupid Saudi-US deal on Syria and the so-called Islamic State (IS). It involves oil and gas control of the entire region and the weakening of Russia and Iran by Saudi Arabian flooding the world market with cheap oil. US Secretary of State John Kerry and the Saudi King concluded details in the September meeting. The unintended consequence will be to push Russia even faster to turn east to China and Eurasia. Saudi Arabia, has been flooding the market with deep discounted oil and reportedly offering its crude to China for a mere \$50 to \$60 a barrel.¹⁴ The Saudi financial discounting operation is being coordinated via the US Office of Terrorism and Financial Intelligence in cooperation with Wall Street that controls oil derivatives trading. The result is a market panic that is gaining momentum daily. The public reason claimed is to gain new markets in a global market of weakening oil demand. The real reason is to put pressure on Iran on her nuclear program, and on Russia to end her support for Bashar al-Assad in Syria.¹⁵

The strategy is similar to what the US did with Saudi Arabia in 1986 when they flooded the world with Saudi oil, collapsing the price to below \$10 a barrel and destroying the economy of then-Soviet ally, Saddam Hussein in Iraq and, ultimately, of the Soviet economy, paving the way for the fall of the Soviet Union. Today, the hope is that a collapse of Russian oil revenues, combined with select pin-prick sanctions designed by the US Treasury's Office of Terrorism and Financial Intelligence will dramatically weaken Putin's enormous domestic support and create conditions for his ultimate overthrow.

The basics are the budgeted price for Russia is \$100 and Iran \$135 per barrel. Oil provides 45% of the Russian budget. If the price stays at \$60 a bbl, Russia's GDP will shrink at least 4.5 % in 2015. Saudi Arabia too is suffering but its economy is resilient enough at its budgeted price of \$95 a barrel and has recently announced that its budgeted price of the

www.globalresearch.ca/the-secret-stupid-saudi-us-deal-on-syria/5410130

14. Crude Oil Drops Amid Global Demand Concerns, IB Times, M. Rochan, October 11, 2014, <http://www.ibtimes.co.uk/crude-oil-drops-amid-global-demand-concerns-1469524>

15. Saudi Arabia to pressure Russia Iran with price of oil, Turkish Anadolu Agency, Nihan Cabbaroglu, 10 October 2014, <http://www.aa.com.tr/en/economy/402343-saudi-arabia-to-pressure-russia-iran-with-price-of-oil>

next year is \$40 a bbl! Saudi Arabia has a stockpile of foreign currency worth some \$740 billion, which it will use to finance its deficits. Saudis have given a clear hint to Russia and Iran that Saudi Arabia is preparing for a long drawn out battle with them and perhaps with the ‘frackers’ of the US.

The first constant is that Russia wants to end America’s super power hegemony and America wants to end the supply of Russian gas to the EU. Presently, Russia is using Europe’s total dependence on its gas as a weapon to increase its strategic position. It was reported that Russia has threatened Europe to cut off the gas supply.¹⁶ The second constant is the complex web of Shia-Sunni rivalry. Iran is the heart of the Shi’ite Muslims. Iraq is 61% majority Shi’ite. Syria’s Bashar al-Assad is an Alawite, a satellite branch of the Shi’ite. About 23% of Turkey is Alawite Muslim. Bahrain has 75% of Shi’ite Muslims ruled by the Sunni Al-Khalifa family and firmly tied to Saudi Arabia. Significantly, the richest Saudi oil region is dominated by Shi’ite Muslims working in the oil installations. On the Sunni side are the Gulf Emirates, Qatar, Kuwait, the Taliban and Al Qaida led by ultra-conservative Wahhabist Saudi Arabia. Other constants are the economic weakness in Europe, China and Japan, which means lower demand for commodities as well as a strengthening dollar. Prices of many other industrial commodities have also declined over the last year; gold, silver and iron ore more than oil.

Saudi efforts duly supported by the US are doomed to fail for many reasons, not the least, because Putin’s Russia has taken major strategic steps together with China and other nations to lessen its dependence on the West.¹⁷ It will help Putin if the Dollar does not remain the world trade currency, especially for oil.

THE SO-CALLED FREE MARKET IN OIL TRADING

Then there is the so-called ‘free market’ at play evening out supply with demand. If demand increases with restricted supply, the prices go

16. Mike Adams, “Russia throws down the gauntlet: energy supply to Europe cut of”, January 16, 2015 http://www.naturalnews.com/048313_currency_war_Russia_petrodollar.html#ixzz3PF9QwHKE

17. F. William Engdahl, “The Secret Stupid Saudi-US Deal on Syria”, 26/10/14, <http://www.globalresearch.ca/the-secret-stupid-saudi-us-deal-on-syria/541013>.

up and vice versa. However, there are other factors at play in the so-called 'free market'. Notable players are the Goldman Sachs Gang, to include Morgan Stanley, and JPMorgan Chase, which run the Nymex and ICE (Intercontinental Exchange Inc.), Tocom (Tokyo Commodity Exchange) and Dubai Mex.¹⁸

It isn't always the consumption of real oil that drives up prices — it is the trade in paper oil. By the summer of 2008, commodities speculators had bought and stockpiled enough oil futures to fill 1.1 billion barrels of crude; speculators owned more future oil on paper than there was real, physical oil stored in storage tanks and the Strategic Petroleum Reserve. It was a repeat of both the Internet craze and the housing bubble.¹⁹ During the record-high oil spike of 2008, Saudi Arabia told the Bush administration that roughly \$40 of every barrel of oil was the result of speculators driving up the price.²⁰

In what is by now a painfully familiar pattern, the oil-commodities melon hit the pavement hard in the summer of 2008, causing a massive loss of wealth; crude prices plunged from \$147 to \$33. Once again the big losers were ordinary people.²¹

THE PRICE AND MARKET SHARE WAR

Lower prices have had other fallouts. For example, shale producing company margins have dropped and some companies are likely to close down. Although the average American will be happy as he has to pay less for gas resulting in an economic boost, North Dakota and Texas will see a drop in their revenue and there will be pressure on Alaska's budget. As we have seen earlier the cost of production of oil sands and shale oil is between \$40 and \$60 per bbl.

18. Energyskeptic, "Goldman Sachs has manipulated markets since the Great Depression and still is", 13/04/14 and Matt Taibbi, "The Great American Bubble Machine", 05/04/10

19. Ibid

20. Carl Gibson, "Like the Low Gas Prices? They Could Be Even Lower in 2015", 30/12/14, <http://readersupportednews.org/opinion2/277-75/27776-focus-like-the-low-gas-prices-they-could-be-even-lower-in-2015>

21. Energyskeptic, "Goldman Sachs has manipulated markets since the Great Depression and still is", 13/04/14 and Matt Taibbi, "The Great American Bubble Machine", 05/04/10

Arab oil producers want to drive mainly the American frackers who are causing the over-supply of oil, out of business. That may not of course be possible because the 'frackers' are also lowering their costs of production. One estimate is that 82% of American production would still be turning a profit at \$60 a barrel.

For all intents and purposes, OPEC is now engaged in a "price war" with the US. This means that it's relatively cheap to pump oil out of places like Saudi Arabia and Kuwait. But it's more expensive to extract oil from shale formations in places like Texas and North Dakota. As the price of oil keeps falling, some US producers may become unprofitable and go out of business. And the price of oil will stabilize. At least that's what OPEC members hope.²²

Demand for crude oil rose by about 9 mm bopd from about 78MM to 87MM bopd between 2004 and 2013. Two of the highest cost oil producers of the world, the US and Canada, have captured most of this increase in demand. Of this increased demand, the share of Gulf producers has risen by a mere 3 MM bopd from about 25MM to 28.368MM bopd. The rest of about 6MM bopd went to tar sands or LTO. Normal laws of economics dictate that the entire about 9 MM bopd increase in demand for crude over the preceding ten years should have been from cheap crude of West Asia and perhaps only from Saudi Arabia. To sum up: the Gulf producers want to get back the entire 9+ MM bopd now getting produced from the very high cost LTO and tar-sand sources of the US and Canada. For this to happen oil prices will have to stay below \$60/bbl. The Boston Tea Party was the very first price war. How will this war end? .²³

CONCLUSION

The variables that would decide the fate of the crude price are the economic survival of Russia and of the American frackers, the super power status of the US and its ability to lessen the dependence of the EU on Russian gas, success in putting pressure on Iran's nuclear effort and lastly the outcome of the tussle for the dominance in the Muslim

22. Brad Plumer, "Why oil prices keep falling – and throwing the world into turmoil", Vox.com, 31/12/14, <http://www.vox.com/2014/12/16/7401705/oil-prices-falling>

23. Kottlilil Narayanan, "The oil price war of 2014", <http://www.indianoilandgas.com/>, 23/12/14

world. Once these critical issues settle down, so would the riddle of crude oil prices.

MAJOR GENERAL S.C.N. JATAR, (RETD)



A civil engineer and a fellow of the Institution of Engineers, Maj. Gen. S. C. N. Jatar was commissioned in the Bombay Sappers in June 1954. He was Head of the Indian Military Training Team and Chief Instructor at the Nigerian Defence Academy, Nigeria, commanded an engineer regiment during the 1971 war and was staff officer to the Expert Committee for assessing the threat to India chaired by General K. V. Krishna Rao.

He commanded infantry brigades in the Kashmir Valley and Rajasthan Desert.

In early 1981, he went on deputation to Oil India Limited in the wake of the oil blockade in Assam. He was successful in bringing up the production to over 60000 barrels per day.

He then rose to become the CMD Oil India Ltd and put Arunachal Pradesh and Rajasthan on the petroleum map on India. He was later CMD ONGC Videsh Limited. He negotiated a production-sharing contract (with PetroVietnam) with ONGC-Videsh as the operator. He was elected as the chairman of the Standing Conference of Public Enterprises (SCOPE), the apex body of the central public sector and was president of the Petroleum Sports Promotion Board.

On superannuation, General Jatar served as consultant to Hindustan Petroleum Corporation Ltd, project advisor to SCOPE, president of RPG Petrochem and MD of Garware Shipping Limited. He served on the governing board of the Pune University Senate and Pune Stock Exchange. He was on the steering committee of India's National Gas Hydrate Programme and is currently on the Board of Videocon Industries Ltd.



Sino-Indian Border Dispute: Deterring the Dragon!!

Air Marshal V.K. Bhatia, PVSM, AVSM, Vr C & Bar, IAF (Retd)

INTRODUCTION

At the heart of the Sino-Indian relations lies the boundary dispute between the two countries. It all started with the Chinese non-acceptance of the 'McMahon Line' after the communists came to power in mainland China in 1949 and, soon after, the forcible takeover of Tibet in 1950 by Maoist China. This, coupled with China's unilateral action in surreptitiously building a road on the Indian side of the ML in Aksai Chin (Ladakh), and its claims in the then NEFA area, led to a Sino-Indian conflict in 1962 which resulted in an ignominious defeat for the Indian ground forces, scarring India militarily, politically and, psychologically. Over the years, in a bid to analyse the '1962' Sino-Indian war', one of the major causes for India's military debacle has been attributed to the non-use of the combat arm of the Indian Air Force (IAF).

Fifty years on, while the Sino-Indian border issue still remains unresolved, there are a plethora of questions being asked by India's security and strategic community. These not only pertain to the larger issues concerning overall Sino-Indian relations, but also deal with the possibility of China initiating a fresh military conflict in the near/mid-term in support of its territorial claims. The paper endeavours to look

ISSN 2347-9191 print

© 2015 Centre for Advanced Strategic Studies

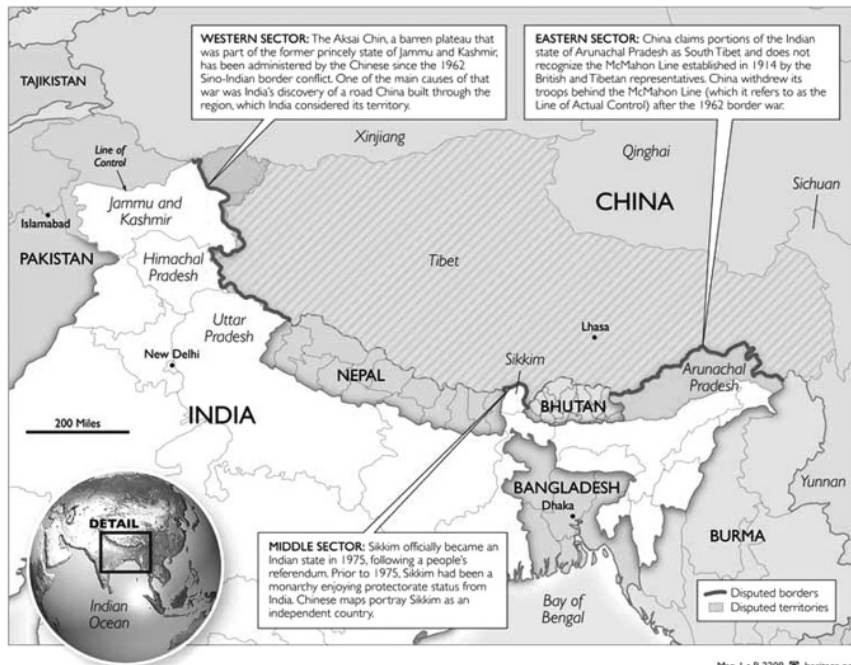
CASS Journal, Vol. 2, No. 2, April-June 2015, pp. 41-60

at the genesis of the Sino-Indian border problem, the strategic challenges posed by China to India in the years ahead and the possibility of resolving the border issue peacefully between the two. The paper carries out a comparative qualitative/quantitative study of both air forces (PLAAF vs. IAF) and their relative capabilities in the region of conflict in the event peaceful processes to solve the border issues fail to succeed. The role of the IAF and on how it should proceed to build on its capabilities to prepare for a possible another round of Sino-Indian military conflict over the border issue would also be highlighted.

BACKGROUND INFORMATION

The Chinese occupation of Tibet removed the ever existing political and geographical buffer between China and India, so dexterously created by the British during the 1914 'Simla Agreement'; with the creation of the McMahon Line (ML) to delineate the Indo-Tibetan border. The

India, China Disputed Borders



Agreement was honoured by all the concerned parties with independent India inheriting the same arrangement after the British withdrawal from the Indian sub-continent in 1947. However, soon after taking over Tibet – labeled, “peaceful liberation of Tibet” – communist China reneged on all previous understandings castigating the ‘Simla Agreement’ as one of the “unequal treaties” imposed by the British ‘colonial’ power at a time when China was weak and preoccupied (See map of China’s border dispute with India on previous page). Faced with a powerful communist China and lacking international support for Tibetan independence, the Dalai Lama was forced to sign a ‘Seventeen-Point Agreement’ with Beijing in May 1951, which, while promising genuine autonomy and local self-rule under the then Tibet’s established system of governance, was however never allowed to function.¹

The removal of the all-important buffer by China’s occupation of Tibet in one stroke of force should have warned India of the dangers ahead. Instead, the benevolent India – drugged by the ‘Hindi-Chini Bhai-Bhai’ (Indians and Chinese are brothers) syndrome, bent over backwards to accommodate the Chinese communist regime “bilaterally and regionally; whether by immediately recognising it, supporting its rightful entry into the United Nations, recognising Tibet as an autonomous region of China or holding China’s hands at Bandung to alleviate the fears of the South-East Asian countries of the communist takeover of this large country.”²

For the hard-nosed China on the other hand, the next step was to eliminate India’s – inherited from the British – privileges and rights in Tibet. To this end, in 1954, the ‘Panchsheel Agreement’ was signed between china and India wherein, for the first time, Tibet was referred as “Tibet region of China”. With this, India in effect, accepted China’s sovereignty over Tibet, but failed to link this generous concession – as a quid pro quo – to the settlement of the boundary with Tibet (now China).³ India failed to foresee the Chinese extra-territorial designs in not only physically

1. For the details of the agreement, see THE AGREEMENT OF THE CENTRAL PEOPLE'S GOVERNMENT AND THE LOCAL GOVERNMENT OF TIBET ON MEASURES FOR THE PEACEFUL LIBERATION OF TIBET, 23 MAY, 1951, Available at: <http://www.tibetjustice.org/materials/china/china3.html>, accessed on, 27 December 2012.

2. Kanwal Sibal, “India-China Relations: Problems and Prospects,” Occasional Paper, July 2012, Vivekananda International Foundation, P. 5.

3. Ibid.

occupying Tibet but, also, extending Tibet's geographical frontiers to suit its perceived strategic needs. China's unilateral action in altering the then accepted ground situation by constructing a road in the Aksai Chin area of Ladakh to link western Tibet with its Xinjiang province was a case in point and came as a rude shock to the Indian leadership. India failed again by going headlong in extending its presence and authority in remote areas – hitherto left unoccupied – without sound planning and adequate military preparations in terms of resources and training. This flawed strategy coupled with hollow sloganeering to throw out the Chinese out of every square inch of motherland's sacred soil failed too, with the Chinese decision to "Teach India a lesson" which resulted in the 1962 Sino-Indian conflict.

CHINA'S TERRITORIAL CLAIMS

In the last sixty two years since the communists came to power, China has shown a voracious appetite for what it conveys as "historical losses" of territories, and, thus, its claims through physical occupation and maps/atlas. It has been involved in border wars with not only India but also with Russia, Korea and Vietnam. Interestingly, 'after the occupation of Tibet, Mao Tse Tung described Tibet as China's palm with Nepal, Sikkim, Bhutan, Arunachal (then NEFA) and Ladakh as its "five fingers".⁴ A few maps had even claimed that entire Assam and even Andamans were "historically" a part of China. China is known to claim large territories across its borders with practically all its neighbours and while 'Mao's' (far-fetched) idea may have been shelved with regard to the Indian sub-continent, China continues to claim large chunks of territories across the McMahon Line. Here also, China has been selective as to how it deals with different countries of the region depending upon its long-term strategic perceptions. For example, while it has accepted the McMahon Line as its boundary with Afghanistan, Nepal and Myanmar; it has major differences on the issue with India and Bhutan.

4. V P Malik, "Foreword," in Gurmeet Kanwal and Dhruv C Katoch, eds., *China's Defence Policy: Indian Perspective* (New Delhi: Centre For Land Warfare Studies and Knowledge World, 2011), P. X.

SINO-INDIAN RELATIONS: FESTERING WOUNDS

But, the border issue is not the only problem in the Sino-Indian equation which led to the 1962 war. Tibet poses more obstacles which cast long shadows on China-India ties. Dalai Lama living in India since his exile from Tibet in 1959 continues to be an old thorn in India's relationship with China. Beijing has never 'forgiven' India for harbouring the Dalai Lama and, strongly resents the continued protection afforded by India to the exiled Tibetan spiritual leader. China does not understand India's historical and cultural compulsions of welcoming a revered guest. And, despite Delhi's continued assurances, Beijing is not convinced of India not allowing any Tibetan political activity against China on its soil. China remains chary of Dalai Lama's world appeal and looks suspiciously at his plea of not asking for Tibetan independence but only for the grant of 'true autonomy' offered in the 1951 Seventeen-Points Agreement and as enshrined in the constitution of China (what has come to be known as the Dalai Lama's "Middle Path" approach). Evidently, the Dalai Lama's rise to global stardom and the continued existence of his 'government-in-exile' in India rankles Beijing to the extent of deeply undermining its relations with Delhi.

India finds itself in a 'Catch-22' like situation with its reluctance to politically back the Dalai Lama out of concern for the repercussions of such a policy on India-China relations. On the other hand, the Chinese fail to recognise that an honourable deal with the Dalai Lama would not only be good for Tibet and China, but also, for India-China relations. China believes in the theory of 'Sinification' to assimilate captured territories and wants to apply the same yardstick in Tibet, not realising how it has failed to subjugate the Tibetan society even after pumping in more than a trillion dollars for infrastructural development in Tibet. For China, the Tibetan issue poses a crisis of integrity and image. For India it poses a dilemma – how to avoid offending China without appearing to appease it. Thus, over the last 100 years, India's official position has evolved from 'viewing "Tibet as an independent country" (1911-1949) to accepting Chinese "suzerainty" (1950-1954) to "sovereignty" (1955-1988) to accepting "Tibet as an autonomous region of China" (1988-2003), and finally recognising "Tibet as part of China" (2003-present).'⁵

5. A. Shourie, "India's Tibet Policy," unpublished paper (2008); A. Shourie, *Are we deceiving ourselves again?* (ASA/Rupa, 2008) quoted in Mohan Malik, *China and India: Great Power Rivals* (Boulder and London: FIRSTFORUMPRESS, 2011), P.139.

It is evident that India's gestures to accommodate China's sensibilities with regard to its position on Tibet have elicited little positive response from China. On the contrary, China with its galloping double-digit economic growth (till very recently) and its ever-increasing military might has continued to harden its stance on the border issue.⁶ The 1993 and 1996 Agreements on creating 'peace and Tranquility' on the border and 'Confidence Building Measures' including respect for the LAC (Line of Actual Control) with an eventual implied aim of converting it into China-India boundary have been cast aside. Instead, its territorial claims over literally the entire state of Arunachal Pradesh get shriller by the day. In a deliberate attempt at cartographical aggression, China has started showing its claimed areas on Indo-Tibetan border as Chinese territory. By now it should be clear to everyone that China does not believe in reciprocating niceties. It is ruled purely by hard-headed policies of territorial extensions to achieve what it perceives of itself as the larger 'Middle Kingdom'

The raw truth also is that China abhors competition. It is naturally irked by India's growing economic strength and stature as an emerging power in Asia. India's assertion that there is enough global space for both countries to co-prosper does not find favour with China. There is an old Chinese saying that "A mountain cannot have two tigers". China would therefore like to weaken India for it to be reduced to a 'second class state'. Its encirclement of India by creating what has come to be known as the 'String of Pearls',⁷ its unprecedented support for Pakistan by converting it into a nuclear 'proxy' state – permanently challenging India – and, its refusal to amicably settle the boundary issue are all strategies to keep India constantly under pressure and unsettled. In the pursuance of above, China would wait for the right moment to strike the bargain on the border issue with India. And that moment would be when China has far out-stripped India in all elements of national power including economic strength and military might. China would then be able to apply political and military coercion to settle the border issue heavily in

6. For 1993 and 1996 Agreements, See Swaran Singh, "Three Agreements and Five Principles between India and China," in Tan Chung, ed., *Across The Himalayan Gap: An Indian Quest for Understanding China* (New Delhi: Indira Gandhi National Centre for the Arts and Gyan Publishing House, 1998), Available at: http://ignca.nic.in/ks_41062.htm, Accessed on 27 December 2012.

7. Christopher J. Pehrson, "String of Pearls: Meeting the challenge of China's rising power across the Asian littoral," July 2006, Available at: <http://www.strategicstudiesinstitute.army.mil/pdffiles/pub721.pdf>, Accessed on 27 December 2012.

its favour like it did with Vietnam and Russia in their moments of weakness. India is not the only country which has come into China's 'Cross-hairs' in its relentless pursuit of extra-territorial ambitions. Many of its neighbours in the Far East and in Southeast Asia are feeling the heat; be it the South China Sea or the East China Sea regions.

Over Tibet, both China and India have holistically advocated a just solution to the border issue, in the true spirit of 'give and take'. However, while India has agreed to the Chinese position on its claim line in Aksai Chin area, China has apparently reversed its position in Arunachal Pradesh. China has begun to denote the area as 'Southern Tibet' and has made it its 'sacred duty' to free it for Tibetans even after the Dalai Lama's "public position, that Tawang" (and by implication Arunachal Pradesh) "belongs to India".⁸ China's continuing verbal outpourings and unilateral belligerent actions with reference to Arunachal Pradesh have shown palpating aggressiveness. These actions coupled with its massive infrastructural buildup (civil & military) in Tibet create deep concerns in India as to China's real future intentions. And even as the Indian security advisory establishment continues to downplay/deflect the threat from China, rumours are fast gaining ground among at least some sections of the Indian larger security community, of a possible second 'lesson' from China at a time of its own choosing.

THE NEXT ROUND?!

Arguably, "at this stage, it would be difficult to envisage as to when and how a future Sino-Indian border conflict – if it does take place – will play itself out."⁹ In the 1962 war, China was hardly in a position to use its air power to influence the ground battle. It is a well-known fact that in 1962 the Chinese offensive air capabilities in Tibetan region were practically non-existent because of the design/operational limitations of its fighter fleets consisting mainly of MiG-15s, MiG-17s and a few MiG-19s as also, hardly any worthwhile high-altitude airstrips in Tibet for these aircraft to operate from. Similarly, China's

8. Kanwal Sibal, "India-China Relations: Problems and Prospects," P. 7.

9. V.K. Bhatia, "Deterring the Dragon," SP's Aviation, Issue 12, 2012, Available at: http://www.spsaviation.net/ebook.asp?Id=121207135336-3dec073bedb04187acbee3b8995c9248&Name=sp_s_aviation_december_2012&Info=SP's%20Aviation%20December%202012&t=1355115777656&r=91&year=2012, accessed on 27 December 2012.

capability to strike Indian cities with its bomber aircraft such as the IL-28s was also limited owing to constraints of range when operating from its mainland airfields. The Chinese bombers would have also been highly vulnerable to interception by the IAF air defence fighters, once over Indian Territory. The IAF, on the other hand, could operate with ease from its many airfields located in the plains in both the western and eastern theatres without compromising on their payload capabilities and be gainfully employed in the traditional interdiction and close air support roles. Properly used, Indian jet fighters would have caused havoc to the (deprived of any air cover) Chinese ground forces. In the end however, neither China (because it could hardly) nor India (largely due to unfounded fears of the Chinese Air Force) used their combat aircraft, resulting in Indian army succumbing to the much superior Chinese ground forces. But, that was more than half-a-century ago. In the new millennium, it can be said without any ambiguity that in the event of China initiating another round of conflict in the form of a limited war to militarily settle the border dispute with India, it can and would make full use of its air power in a bid to once again force the outcome in its favour. The question that looms large is: In the vastly changed scenario vis-à-vis the PLAAF (Chinese Air Force) capabilities since 1962, can the IAF (Indian Air Force) – if used to the hilt – still go by the old axiom of being able to successfully meet the multi-faceted challenges of the ‘Red Dragon’?

PLAAF (CHINESE AIR FORCE) IN ITS NEW AVATAR

A well-planned, long-term and time-bound approach to military modernisation – conceived as part of Deng Xiaoping ‘Four Modernisations’ – were instrumental to start the process of transforming the PLAAF from an antiquated, derelict, poorly trained and over-sized force of the 1960/70s to a modern ‘lean and mean’ aerospace power with increasing proficiency to undertake its stated mission in the 21st century. It was not an easy task for ‘Deng’ to start the process of PLAAF’s modernisation which was so heavily shackled to the archaic PLA’s (Chinese Army) system. It is sometimes said that one of the reasons China went to war with Vietnam was Deng’s desire for his army brass to understand the importance of air power even at the expense of Chinese forces getting a bloodied nose. However, the real eye-opener for

the Chinese leadership was the US 'shock and awe' aerial assault against Iraq during the 1991 'Gulf war' which established beyond doubt the predominant role played by air power in the conduct of modern warfare and with that, PLAAF's transformation started with the zeal it deserved.

Adopting the philosophy of 'Buy/Steal and, Make/Reverse- engineer; China's military modernisation (especially of the PLAAF) has been progressing purposefully for the last more than two decades. China made full use of post-cold war economic hardships of Russia by buying its military equipment and aerospace technologies at favourable terms. It bought the Su-27 aircraft from Russia and copied it to produce its indigenous version, J-11, in large quantities. It also equipped the PLAAF through outright purchase from Russia, the Su-30 MKK (an advanced version of Su-30) and the Su-30 MK2 air dominance fighters. The Israelis on the other hand, passed on the technology connected with their stalled 'Lavi' programme for China to successfully develop and produce its 4th generation and 4th generation+ J-10 and J-10B jet fighters, respectively. But, it is not only the Soviet/Russian designs or, the Israeli aerospace technologies, which provided the leap forward; the Chinese aerospace scientists themselves have been carving out big successes in indigenous design and development. On January 11, 2011, China stunned the global aviation community by test-flying the Chengdu J-20 – its first 5th generation stealth jet fighter. Not to be undone, Shenyang, China's second manufacturer of jet fighters did a double on October 31, 2012 by launching the J-31, another 5th generation jet fighter on its maiden flight. Both these prototype designs are reportedly under different stages of development and are likely to become operational around 2020.¹⁰

Having discarded the so-called 'dead-wood' from its inventory the PLAAF currently has around 1,700 combat jet fighter aircraft comprising of a judicious mix of 4th/4th+ and 3rd generation aircraft (See Table 1).

10. Russell Hsiao, "China's Fifth-Generation Fighters and the Changing Strategic Balance," China Brief, Vol. 9 Issue. 23, November 19, 2009, Available at: [http://www.jamestown.org/programs/chinabrief/single/?tx_ttnews\[tt_news\]=35745&cHash=f88fba6a86](http://www.jamestown.org/programs/chinabrief/single/?tx_ttnews[tt_news]=35745&cHash=f88fba6a86), Accessed on 27 December 2012.

TABLE 1
PLAAF FIGHTER/BOMBER AIRCRAFT HOLDINGS

Aircraft	Origin	Type	In Service	Remarks
J-10	China	Multi-role	300+	4th/4th+ Gen
J-11	China	Air-superiority/ Multi-role	200	4thGen
Su-27	Russia	Air-superiority	70	4thGen
Su-30 MKK	Russia	Air-superiority	100	4th/4th+ Gen
Su-30 MK2	China	Multi-role		
JF-17/FC-1	China/Pakistan	Multi-role	N/K*	4thGen
J-8 II	China	Interceptor	180	3rdGen
J-7	China	Interceptor	500	3rdGen
JH-7	China	Strike	70**	4thGen
H-6	China	Bomber	60	3rdGen
Q-5	China	Ground Attack	200+***	3rdGen

Source: Open web sources

* China is still in the process of evaluating the aircraft while the PAF has already inducted two squadrons worth of aircraft. Once inducted in PLAAF, these aircraft will replace the older J-7 aircraft.

/JH-7 aircraft are being inducted in greater numbers to replace the older Q-5 ground attack aircraft

In addition, the PLAAF has a large inventory of transport aircraft ranging from IL-76 strategic airlifters (20-30), multi-purpose Y-8 transporters derived from the Russian four-engined An-12 design (100-120), Y-7 based on An-26 twin turbo-props and 300+ Y-5 single-engined light utility aircraft. The PLAAF also boasts of a sizable number of VIP transport aircraft which include Tu-154M and the smaller Bombardier Challenger 600, etc. The PLAAF fields 500+ helicopters comprising attack and utility versions of indigenous and Soviet designs. It has also acquired about two dozen Sikorsky S-70 Black Hawk utility helicopters from the US.

The PLAAF's 'force-multiplier' fleet of AWACS/AEW&C and FRA though small is likely to grow with time. However, where China really scores is on its holdings of a very large variety and numbers of UAV/UCAV and target drones which could be used for multifarious missions.

Also, China possesses unprecedented large quantities of short/medium range ballistic and cruise missiles which could be used to strike all types of targets inside enemy territory with conventional warheads.

**IAF (INDIAN AIR FORCE): COMING OUT OF THE PITS –
PRESENT & FUTURE**

Ironically, in the 1990s, when China hit the 'fast forward' for the PLAAF's modernisation, the IAF was confronted with a void due to India's then precarious financial position and the breakup of the Soviet Union – till then, the major provider of defence equipment to India. This had a ripple effect on the IAF which began to experience crippling draw down in terms of the strength of its combat jet fighter squadrons and other combat equipment. The IAF, which had laboriously built up its combat force levels to 39 ½ fighter squadrons by late 1980s, lost almost a quarter of its strength and was teetering at a record low of around 29 squadrons by the middle of the last decade. This happened despite the induction of Su-30 (later Su-30 MKI) into the IAF which had commenced around the turn of the last century. The extraordinary delay in the indigenous LCA (Tejas) programme did little to help matters. In an endeavour to stem the downslide, the IAF ordered more Su-30 MKIs – with the order swelling up to 272 aircraft – and, vigorously pursued the 126-aircraft MMRCA programme. The IAF has already received a little over 200 Su-30 MKIs to form 10 squadrons with this type so far. But, purely in numerical terms the IAF is down to 700 jet fighters now, having lost about 200 aircraft from its earlier holdings (See Table 2).

TABLE 2
IAF COMBAT JET FIGHTER FORCE LEVELS (PRESENT STATUS)

Aircraft	Origin	Type	In Service	Remarks
Su-30 MKI	Russia/India	Air Dominance/ Multi-role	200	4th Gen+
Mirage 2000	France	Multi-role	55+	4th Gen*
Jaguar	France/UK	Strike	150	3rd Gen**
MiG-29	USSR/Russia	Air Superiority	65	3rd Gen***
MiG-27	USSR	Ground Attack	100	3rd Gen
MiG-21 Variants	USSR	Interceptor/ Multi-role	160	2nd/3rd Gen

Source: open sources from web

In the coming years, the biggest worry for the IAF would be to somehow hold on to the present strength by matching phased retirement of the older MiG-21/MiG-27 variants with new inductions arising out of the ongoing programmes. These would include 70 more Su-30 MKIs by 2017-18, being license-produced by HAL at the rate of 20 per annum.

On the indigenous Tejas front, the programme has continued to be plagued by delays. While the eight LSP aircraft are still being utilised for different sets of testing to enhance the operational envelope of the aircraft, the first IOC II configured SP (Series Production) aircraft was handed over to the IAF on January 17, 2015. The FOC (Full Operational Clearance) is now estimated to be achieved only by end 2015-early 2016 and the first MK I Tejas squadron to enter service by 2017-18. The IAF will equip two squadrons with Mk I version of the aircraft with 40 aircraft on order. But, it is pitting its hopes on the Mk II version, which apart from a more powerful GE 414 engine in the 100kN class, will also feature much better avionics and weapons capabilities. Presently, the IAF has planned to equip four squadrons with the Mk II version, when available.

The other major fighter programme which has witnessed inordinate delays is the acquisition of 126 medium multi-role combat aircraft (MMRCA). With Dassault's Rafale having been declared the winner on January 31, 2012, it has taken three years of negotiations without reaching a viable consensus to enable the inking of the deal. It is hoped the impasse will be resolved soon with intervention of the respective governments and the contract finalised before the end of FY 2014-15 and deliveries commencing by 2018.

If the LCA and the MMRCA programmes do not see more delays, and everything goes as per the plan, the IAF's combat jet fighter force levels could go up to a figure of approximately 850 by about 2027 (by end of India's 14th Plan Period), as given in Table 3:-

TABLE 3
IAF'S ESTIMATED JET FIGHTER FORCE LEVELS (AROUND 2027)

S No.	Type	Role	Numbers	No. of Squadrons ()
1	Su-30 MKI	Air Dominance	270	(13) 4th Gen+
2	Rafale	Omni-role	126	(6) 4th Gen+
3	Mirage 2000*	Multi-role	50+	(3) 4th Gen

S No.	Type	Role	Numbers	No. of Squadrons ()
4	MiG-29*	Multi-role	60+	(3) 3rd Gen+
5	Jaguar*	Strike	150	(6-7) 3rd Gen+
6	LCA	Multi-role	124	(6) 4thGen
7	MiG-27**	Ground Attack	70	(4) 3rd Gen
Total			850	41-42***

Source: Open web sources

Note: * It is worth noting that Mirage 2000, MiG-29 and Jaguar aircraft are all undergoing exhaustive mid-life upgrades to bring them closer to the next generation capabilities. In addition, IAF's Jaguars are also earmarked to go through a re-engining programme with substantial improvement in thrust resulting in enhanced operational capabilities.

** Even though some portion of the existing fleet having undergone upgrades recently, MiG-27s of the IAF would have already retired in a phased manner by the end of 13th Plan i.e. by 2022. The void created by their withdrawal from service would have to be filled by increasing the number of inductions of other types such as the FGFA, additional Rafales, etc.

*** The IAF needs to build its force levels further to between 45 to 50 combat squadrons by 2030-32 (IAF centenary) which should include sizable numbers of 5th gen fighters the Indo-Russian PAK-FA and the indigenous MMCA (Medium Multi-role Combat Aircraft)

The IAF is almost at par with the PLAAF where their respective force-multiplier capabilities are concerned; except in 'the unmanned category', where India lags considerably behind China. The IAF has also taken positive steps to improve its fixed-wing airlift and rotary-wing capabilities, measuring up well against the PLAAF. For example, induction of additional C-130J Super Hercules and C-17 Globemaster III aircraft from the US would substantially increase its strategic/tactical airlift capabilities. Similarly, the IAF is addressing its weaknesses in the AD environment by acquiring indigenous Akash and Israeli Spyder SAM systems. In addition, in a joint venture with Israel India's DRDO is developing a LR/MR-SAM systems which would have interception ranges up to and in excess of 70 km.

PLAAF VS. IAF: COMMONALITIES AND DIFFERENCES

It is a well-known fact that both PLAAF and the IAF have undergone substantial changes in their doctrinal concepts in the last couple of decades.

The defining moment for the Chinese armed forces (including PLAAF) came with the articulation in 2004 by President Hu Jintao of “historical missions of the armed forces for the new stage in the new century,”¹¹ which was codified in the Chinese Communist Party Constitution in 2007. The new guidelines require the Chinese armed forces to secure China’s strategic interests even outside its national territorial boundaries. ‘Active defence’ is the operational concept of China’s national strategic guidelines for the new period. The PLAAF would have a leading role in China’s active defence strategy. China’s operational strategy is based on long-range strike and anti-access and area denial (A2AD)¹² capabilities which is not specific to its maritime domain and could be brought to bear over its land borders as well, with obvious implications for India.

The IAF has also gone through metamorphic changes in its doctrinal concepts in conformity with the increasing requirements of a resurgent India. It is not merely coincidental that both the PLAAF and the IAF are converging on their respective goals of transforming themselves into modern strategic air forces with continental reach and all-weather precision strike capabilities and the ability to conduct air operations in highly informationised and network-centric scenarios.

While the doctrinal concepts of the two air forces may be on converging trajectories, where the PLAAF scores over the IAF is in terms of quantitative superiority. As brought out earlier, the PLAAF already has modern fighter fleets with close to 1,700 such aircraft on its strength. They are already twice as much as what the IAF hopes to achieve in the next 10 years. In addition, China is developing J-20 and J-31, two distinctively designed 5th generation aircraft. Fortunately, India has joined up with Russia to co-develop the PAK-FA 5th generation fighter aircraft which may become available to the IAF at a time, coinciding with the indigenous Chinese 5th generation fighter inductions into

11. Jia Yong, Cao Zhi, and Li Xuanliang, “Advancing in Big Strides from a New Historical Starting Point” Referred in James Mulvenon, “Chairman Hu and the PLA’s “New Historic Missions,” *China Leadership Monitor*, No. 27, Available at: <http://media.hoover.org/sites/default/files/documents/CLM27JM.pdf>, Ccessed on 27 December 2012.

12. Nathan Freier, “The Emerging Anti-Access/Area-Denial Challenge,” Center for Strategic and International Studies, May 17, 2012, Available at: <http://csis.org/publication/emerging-anti-accessarea-denial-challenge>, Accessed on 27 December 2012.

the PLAAF. However, due to great disparity between the 'defence budgets' of the two countries (in 2014: China's \$132 billion– which could exceed \$200 billion with hidden defence expenditure – vs. India's \$40 billion) quantitative differences would continue to remain in China's favour.

The second aspect of the PLAAF's superiority over the IAF lies in its ground-based air defence systems. China's sizable holdings of SAM systems such as the Russian supplied S-300 PMU series and indigenous HQ-9/HQ-12 with engagement ranges varying from 50-150 km clearly overshadow the IAF's present capabilities even while the latter is trying to catch up with its newly inducted indigenous Akash and the Israeli Spyder SAMs and joint development with Israel of a 70km range LR/MR-SAM system.

The third area of PLAAF's superiority over the IAF lies in the realm of 'unmanned' UAV/UCAV and drone systems. China has innovatively converted more than 200 of its J-6 (MiG-19) aircraft into unmanned drone systems with a variety of roles ranging from ISR to bombing of enemy's ground targets. In addition, China also has a large arsenal of short/medium-range ballistic and cruise missiles which could be used against enemy targets in varying depths in the enemy territory.

The big question(s) however, is(are): To what extent can China use its otherwise superior air power against India in case of a repeat of the 1962 Sino-Indian conflict over the Indo-Tibet border issue? How would IAF fair against the PLAAF in this scenario? Could the realisation of the comparative air power capabilities of both sides help in finding a just and peaceful solution to the border dispute? And, finally, what kind of momentum needs to be maintained to ensure its eventual inevitability?

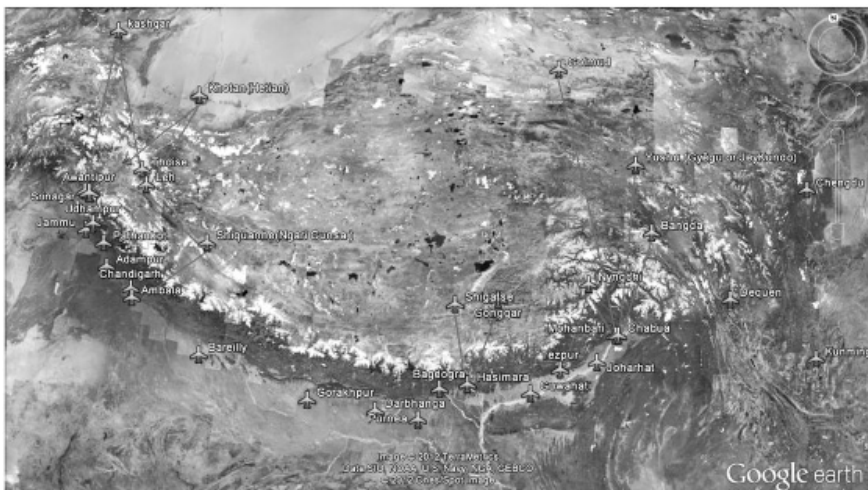
PLAAF IN TIBET: LIMITED CAPABILITIES

No one in the world can deny the tremendous efforts made by China to create unprecedented infrastructural capabilities in the TAR (Tibet Autonomous Region). An almost trillion dollar-endeavour has not only resulted in the building of more than 58,000 km of world-class roads and highways but, also the most spectacular Chinese achievement in creating the world's highest rail-link connecting Tibet's Capital Lhasa to Golmud and through it, to the rest of China. The rail link is further being extended right up to 'Nathu La', the border between Tibet and Sikkim in India. In the aviation sector too, China appears to have made great strides by developing a number of airfields through the length and breadth of Tibet, the latest at Nyingchi, merely 30 km away from

the Arunachal Pradesh border (See map below). China can boast of a full-fledged international airport at Lhasa, complete with what may be termed as the highest aerobridge in the world. Xigatse in the southern portion of Central Tibet is another well-developed airfield. However, a google-eye scrutiny of the airfields in the TAR would reveal that while adequate runway lengths have been provided to compensate for the 'altitude factor', most airfields have only rudimentary support infrastructure which would make it difficult for the PLAAF to carry out large-scale air operations in a sustained manner in Tibet. The PLAAF aircraft would also be handicapped in terms of payload capabilities while operating from high-altitude airfields in Tibet. Also, PLAAF does not have adequate flight-refuelling capabilities allowing only limited number of aircraft to get airborne with full payload but partial fuel and then refuel in the air to reach distant assigned targets. On the other hand, the IAF would have access to greater number of airfields, with much better support facilities which it could use for air operations with full payloads against targets in the TAR (see map for comparison). In other words, even though the PLAAF may be more than double the size of the IAF in terms of its overall combat aircraft strength, but in a border war with India, it may find itself at a disadvantage vis-à-vis the numbers (and reduced payloads), it can field against the IAF. Also, without adequate number of 'blast pens' (protective aircraft shelters) the PLAAF aircraft would be vulnerable to counter-air strikes by the IAF.

IAF/PLAAF AIRFIELDS IN INDO-TIBETAN REGION

(With air distances between Indian and Chinese airfields shown in Table 4 below)



Source: Google Earth

TABLE 4
AIR DISTANCES BETWEEN INDIAN AND CHINESE AIRFIELDS

Airfields	Distances
Srinagar to kashgar	625 Km
Srinagar to Khotan	572 km
Leh to kashgar	615 km
Leh to khotan	384 Km
Leh to Shiquanhe	324 km
Ambala to Shiquanhe	363 Km
Hashimara to Shigatse	293 km
Hashimara to Gonggar	324 km
Tezpur to Nyngchi	324 Km
Chabua to Nyngchi	217 Km
Chabua to Golmud	991 Km
Chabua to Jeykundo	624 Km
Chabua to Bangda	393 Km

Source: Google earth

CONOPS (CONCEPT OF OPERATIONS): IAF TO THE FORE

Should China decide to teach India another ‘lesson’ in Tibet, it would bank heavily on its tremendous infrastructure to mobilise massive ground forces (between 30 to 40 divisions) and support elements to overwhelm Indian defences. Due to inadequate ground infrastructure on its side, the Indian army would also have to bank heavily on the ‘air’ for maintenance and logistic support. Both the PLAAF and the IAF, having already achieved a certain level of modernisation (although in differing degrees) would try to achieve air dominance/air superiority by conducting DEAD/SEAD (Destruction/Suppression of Enemy Air Defences) and counter-air operations against each other. The PLA could resort to the use of its superior tactical ballistic/cruise missiles and unmanned drones with conventional warheads in these missions to offset the shortcomings of its air force. However, missiles are handicapped because of their having only a single-shot capability. Therefore, if the IAF improves on its already existing facilities to ensure proper active/passive AD and rehabilitation

capabilities at its airfields and radar sites, it could well weather the Chinese onslaught. On the other hand, it could use this very shortcoming of the PLAAF to its advantage to achieve air superiority/favourable air situation in the battle zone. Once achieved, the IAF could not only remove the danger of PLAAF interfering with the ground operations but, also provide the much needed close air support to the Indian army to help it ward-off numerically much stronger Chinese ground forces. In this scenario, even a stalemate without loss of territory on either side, would tantamount to a strategic victory for India.

THE LAST WORD

In view of all the military might at China's disposal, it would be hard to convince the skeptics of a military situation emerging as depicted above; but, given PLAAF's limitations in Tibet, possibility of such a scenario becomes quite real. This possibility can be further strengthened provided the IAF takes concrete steps to address some major deficiencies and build further on its existing operational capabilities. These among many others, include creation of meaningful defences to be able to neutralise the Chinese conventional ballistic/cruise missile and unmanned drone attacks and, gradually building up its combat squadrons' strength. In addition, it would have to create the necessary capabilities in cyber/information/space domains to successfully take on the Chinese challenges in these forms of warfare.

China nurtures a vision of becoming a global power to be able to challenge the might of the US and; is preparing itself accordingly. It is estimated that China's economy would overtake that of the US by 2030 enabling it to become the greatest economic power in the world. Similarly, China aims to become the number one military power by 2050. It is confident that, in the process, it would be able to automatically create the necessary capability chasm between itself and India to force the border issue in its favour. As its clout rises, so does its aggressiveness – amply reflected in its international behavior, especially against its neighbours with whom it has border disputes.

China has held innumerable border talks with India but shows no signs of resolving the border issue on the earlier clear understanding of converting the LAC into international boundary. On the contrary, its

attitude becomes more aggressive with each round of talks. Apart from its claims in Arunachal, it has gone to the extent of reducing the length of the Sino-Indian border by 1600 Km— giving the impression that Ladakh being part of J&K cannot be considered Indian as J&K is disputed territory.¹³

It appears the only way to make China behave rationally in solving the Sino-Indian border dispute would be for India to build on its own national power. Militarily, it cannot and need not match China 'brick-to-brick and, stone-to-stone'. But, it must create enough military capability to be able to manage China. While both countries are committed to 'No First Use' philosophy on the nuclear front, India needs to build a 'minimum deterrence' capability to cater to its needs. Conventionally too, India would need to build the so-called 'minimum deterrence' capability. An easier way of doing this would be to adequately modernise and expand the IAF – enough for China to see the futility of forcing a military solution to the Sino-Indian border dispute.

Like China, India should also be in no hurry to solve the border issue. India's aim should be to ensure maintenance of 'status quo' on the 'border', while it steadfastly builds up the necessary deterrence. But, it must do so quietly, without back-thumping and media glare; much on the lines as advised by the former Chinese President Deng Xiaoping, who said, "Keep a cool head and maintain a low profile. Never take the lead – but aim to do something big." After all, he was the one, really responsible for China's meteoric rise in the first place.

- By arrangement with RSIS, Singapore

AUTHOR'S NOTE

The author was on a short research fellowship programme at the RSIS (Rajaratnam School of International Studies), at the Nanyang University, Singapore. The paper presented above (in its original format but with due updation) was an outcome of the research carried out at the RSIS which had published an abridged version last year as a 'Policy Brief' in one of their publications.

13. "Sino-Indian border is only 2,000 Km long, claims Chinese media," Daily News and Analysis, December 19, 2010, Available at: http://www.dnaindia.com/india/report_sino-indian-border-is-only-2000-km-long-claims-chinese-media_1483372, accessed on 27 December 2012.

AIR MARSHAL V.K. BHATIA
PVSM, AVSM, Vr C & BAR (RETD)



A product of the National Defence Academy, Khadakvasla, Pune, Air Marshal V.K. Bhatia was commissioned as a fighter pilot in the Indian Air Force on May 26, 1962. The Air Marshal has a total of 5,500 hours of flying to his credit which have been accumulated not only on approximately twenty different types of fighters which included Mysteres and Hunters of the sixties, MiG-21s and SU-7s of the seventies, MiG-23s/MiG-27s/Jaguars of the eighties and more modern Mirage 2000 and Su-30s later on of the present generation, but, also, on a large number of different types of military transport aircraft such as An-32, Avro HS-748 and Dorniers, and helicopters such as Chetak/Cheetah and Mi-8/Mi-17 etc.

The Air Marshal has been a Qualified Pilot Attack Instructor and an Air Force Examiner. He spent several years on flying instructional and examining duties both in India and abroad. A Post Graduate of Defence Services Staff College, Wellington and Royal College of Defence Studies, London, UK, he also attended the first ever NBC Warfare Course for officers of the Indian Armed Forces at Timoschenko Academy, Moscow.

During his more than forty years of commissioned service, the Air Officer held a multitude of command and staff appointments at all levels of the IAF. He held the posts of Assistant Chief of Air Staff (Operations) and the Inspector General (Inspection & Safety) at Air HQ. He had the rare distinction of heading three operational commands of the Indian Air Force which included the Central Air Command, South-Western Air Command and the most prestigious Western Air Command.

Air Marshal Bhatia was awarded Vir Chakra gallantry awards in both Indo-Pak wars of 1965 and 1971, respectively. He is also the recipient of the PVSM and AVSM Presidential awards for distinguished service of the highest order. He superannuated in October 2002 and presently, apart from pursuing professional interests in the field of non-conventional energy sources, he is also engaged actively as a writer and analyst on matters connected with military and civil aviation and international relations. He was also an elected member of the Executive Council of the USI (United Service Institution) for six years and presently is a 'Distinguished Fellow' at the CAPS (Centre for Air Power Studies).

Threat of Islamic Extremism to India

Air Marshal Anil Trikha PVSM, AVSM, VSM (Retd)

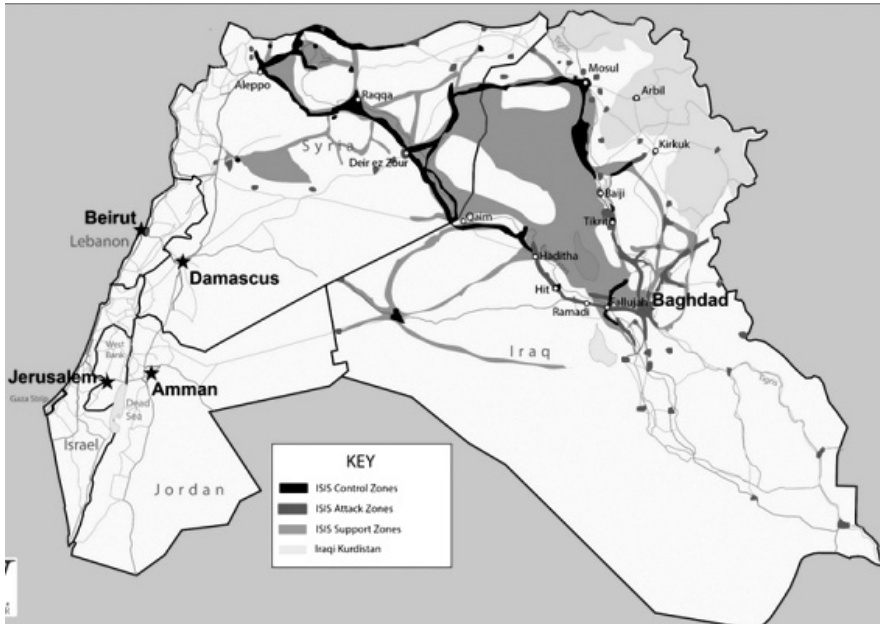
The entire region to the West of India stretching from Pakistan all the way to North and West Africa is in a state of turmoil. Arab spring which was expected to herald political and social renaissance of the Muslim world appears to have ended in disastrous failure. Weakened by wars imposed from outside and armed conflicts arising out of the many tribal and sectarian rivalries, the social and political fabric of host societies lies in ruins. Political void left by vacuum of authority or lack of legitimacy of ruling dispensations has quickly been filled by a variety of Islamic militant outfits like TTP, Lashkar-e-Taiba and many others in Pakistan, Taliban in Afghanistan, Al Shabab in Somalia, Boko Haram in Nigeria, Jabhat al-Nusra in Syria, Al Qaeda in the Arabian Peninsula and myriad other extremist Islamist groups spanning the region. The orgy of violence unleashed by these terrorist organizations in the Islamic world and the brutality with which they have forced their agenda has been breathtaking. The sheer incapacity of the ruling regimes to cope with the challenges posed by them and the seductive appeal of their message raises questions about the extent to which their influence would engulf the remaining parts of the region and cause mayhem in the rest of the world before their inevitable collapse.

Appeal and power of Islamic militancy springs from its ability to tap into layer upon layer of Muslim grievances (both real and imaginary) accumulated over decades and perhaps even over centuries both against

their ruling elites as well as against Western imperial interventions which have sapped the vitality of their societies. Recent history of Muslim countries is nothing but a sorry tale of woes. Dispossession of Palestinians lands first by creation of Israel and then by its relentless expansion;; political, economic and social stasis in the face of brutal repression by dictatorial regimes;; series of military defeats;; destruction of society's fabric caused first by US led wars in Iraq followed by fratricidal sectarian conflict has plunged the Muslim world in a deep crisis. Under multiple stresses, as the old order began to crumble, Islamic movements born in opposition to oppressive secular regimes began to thrive. Banner of Islam has provided a platform for forces of protest to rally because return to the fold of faith gave people a sense of unity and empowerment while secular dispensations over the years had only led to more and more frustration

This was the general chemistry which created Al-Qaeda. It fed on the general despair born out of a sense of helplessness and victimhood afflicting the Muslim world. 9/11 attacks on the US in a way provided Al-Qaeda inspired Muslims a 'yes we can' moment – a dramatic proof that Muslims were after all not powerless to respond to massive Western firepower. The attacks incubated al-Qaeda franchises around much of the world, which are still lethal and functioning even after Bin Laden's death.

The latest menace to appear in the list of Jihadist organizations in the region is Islamic State of Iraq and Sham or ISIS. Born out of chaos enveloping the region and armed with sophisticated weaponry left over by multiple conflicts, it astonished the world by the speed with which it overran a vast tract of territory and established its writ over major urban centers. Equally startlingly it has been able to hold and administer the overrun territory despite the strong armed response that it provoked, including air strikes by a US led coalition.



Territory under ISIS control as on 05 Dec 2014

(<http://iswiraq.blogspot.in/2014/12/isis-sanctuary-map-december-5-2014.html>)

In another audacious act of will, in Jun 2014 an Iraqi Sunni named Abu Bakr al – Baghdadi announced creation of an Islamic state stretching across parts of Syria and Iraq, and declared himself as the caliph.

90 years after being consigned to the dustbin of history, idea of a caliphate may at first appear as an atavistic fantasy. But it would be dangerous to underestimate its appeal. By harking back to a golden age of Islam when Islamic intellectual and cultural achievements held sway, the promise of return to glory evokes a powerful aspiration in the wider Muslim world. Embedded in some corner of Muslim memory is the idea of a vast empire which stretched from Spain and Morocco all the way to Central Asia and to the southern bits of Pakistan under a single leader. It is this memory that makes them long for unity and attracts them towards a mythical world that they aspire to be a part of.

In 2006, a Gallup survey of Muslims living in Egypt, Morocco, Indonesia and Pakistan, two-thirds of respondents said they supported the goal of “unifying all Islamic countries” into a new caliphate. Their sentiments are reflected in map of the Caliphate which ISIS aspires to.



Source: <http://www.iraqnews.com/arab-world-news/new-isis-map>

THREAT TO INDIA

The cult of Islamic militancy has not remained confined to the Middle East and the Maghreb. It has jumped frontiers and even oceans to threaten practically the whole world. Recent terrorist attacks in countries geographically as far apart as Australia and France are evidence of the lengthening shadow of terrorist threat by individuals fired by radical Islamic ideology. War against India was declared more openly by Al Qaeda in Sep 2014, when Ayman al-Zawahiri announced creation of Qaedat al-Jihad - a new franchise in the Indian Subcontinent to “raise the flag of jihad, return Islamic rule, and empower the Sharia of Allah across the Indian subcontinent.” In order not to alarm the public at large and more importantly to prevent an impression taking hold of any sympathetic association of Indian Muslims with al Qaeda, Indian establishment appears to have shrugged off the gauntlet thrown by Zawahiri. But public appearance of nonchalance does not mean that the threat is inconsequential.

According to 2011 census, India’s Muslim population accounts for 14.2 % of the total. In raw numbers, it figures as the second largest population in any country after Indonesia. The subcontinent underwent trauma of partition not too long ago wherein both Hindus and Muslims

suffered grievously. Despite that tragic event it is widely acknowledged that Muslim community was well assimilated in the Indian national mainstream. That is not to brush under the carpet the not too infrequent communal clashes which had been erupting in some states from time to time, But they appeared to be isolated, local phenomenon arising out of local grievances or conflict of interests and often instigated or supported by groups seeking to derive political mileage out of some local issues

The first serious cracks in this perception began to appear following the large scale rioting and violence which occurred in the wake of 1992 destruction of the Babri Masjid. Indiscriminate, large scale terrorist attacks which followed at regular intervals in the following years and evidence linking Pakistan with vast underground criminal gangs controlled by Muslim dons like Dawood Ibrahim and Memon brothers, a perception congealed that some Muslim groups in India were colluding with Pakistan to perpetrate terrorist attacks on innocent Indian population. Pakistan's deep involvement in fuelling insurgency in J&K, frequent terror attacks, and pro-Pakistan demonstrations hardened a perception that common Muslim identity with Pakistan had a stronger appeal for the valley Kashmiris than affection for India. Therefore a subconscious idea that at least some Muslims are anti national began to take hold.

Events in the world at large also brought into sharp relief issues engaging Indian minds. 9/11 hit the whole world like a bomb shell. America's launching of a Global War on terror divided the world into two groups i.e. those who were the perpetrators of terror and those that were the victims. Since perpetrators resided almost exclusively in Islamic countries, globally terrorism came to be associated with Muslims.

India has been a victim of terrorism perpetrated by a variety of indigenous extremist groups. Along side Indian Mujahedeen, Naxals, Bodos and many others have figured prominently on the terror map of India. However it is Pakistan's shadow that has loomed largest in Indian perceptions. Pakistan's emergence as a religious state deriving inspiration from hard-line fundamentalist Wahabi philosophy and its proven association with most terror plots all over the world has firmly established it as fountainhead of terrorism. Pakistan twin association with Islam on the one hand and terrorism on the other has tended to fix a public image of Muslims and terrorism. Despite strenuous denials by all concerned that Islam and terrorism are not synonymous, perceptions in

this regard have tended to harden. It is crucial that such an apprehension does not take root in India.

In times of stress, conspiracy theories abound and reason and rationality takes a back seat. At such times it is necessary to revisit facts to see if they add up to the heresies being propagated. Indian experience with its Muslim population tells us that in sharp contrast to bloodletting, growing radicalism and deepening conservatism in Pakistan next door and despite growing tide of extremism across the Islamic world, Indian Muslims have remained moderate, tolerant and ready to engage members of other religious communities. Several factors could have helped shape these attitudes. In its 1000 year long history in South Asia, Islam was dominated by Sufis who integrated closely with non-Muslim Hindus sharing many cultural practices and thus giving birth to common traditions. Character of Islam in Pakistan, which inherited the same tradition changed primarily due to the necessity of emphasizing its separateness from India in order to find a basis of its identity. Patronage of cash rich Saudi Arabia helped it both to invent its Islamic roots as well as dollars to perpetuate it. Saudi funded seminaries and Madrasas brainwashed large sections of Pakistani population and particularly children into adopting hard-line Sunni Islam. Victory of ISI trained Islamic fighters in their war against the Soviets in Afghanistan gave militant Islam a tremendous shot in the arm and laid the ground on which extremist ideology of Islam flourished. No less important was the role of the army which ruled Pakistan for the most period of its independent existence. It consciously departed from its original secular culture both to brainwash its own rank and file as well as to cultivate militant Islamic organizations as strategic assets to fight the more powerful neighbour to its east. Constant barrage of sermons spewing venom against anything and everything perceived to be contrary to precepts of hard line Sunni Islam subverted minds of the large majority of the population. A closed political system run essentially by the security establishment irrigated the rot developing in narrow minds.

Indian Muslims experience has been different. There is no doubt that Indian Muslims have some justifiable reasons to be unhappy. As a community they have lower levels of education, income, political representation and even government jobs. But a robust, lively democracy gives minorities space to remain mobile. Being a sizeable minority

Muslims also have sufficient electoral clout to influence outcomes in their favour. Therefore flawed and insufficient as Indian democracy may be, it still empowers citizens with a voice and hence creates for them a stake in the system. The long and short of it is that Islam in India and Pakistan has developed along two very different trajectories and it would be a gross error to view all Muslims through a single lens. Given the strident advocacy of Hindu nationalism by some right wing forces and their parenting of extreme Hindu nationalistic groups, there was some anxiety over preferences of the current government. However prime minister's commitment to treat the secular constitution as his "bible" and public chastisement of fringe elements of the Sangh Parivar should put at rest those fears.

The bottom line is that Indian Muslim community is constantly being bombarded with messages of victimhood and is being exhorted to make common cause with their co-religionists in fighting injustices being heaped on them. Harking back to days of glory, they attribute reason for the community's precipitous decline from position of power and influence to failure to follow the true precepts of their faith. The path to redemption is told to lie through strict embracement of a way of life as prescribed by their religion. Notwithstanding the fact that the message has got thoroughly muddled by obscurant interpretation by the so called keepers of faith, it still carries a seductive appeal for the young, both educated as well as dispossessed and segments of Muslim population disoriented by onslaught of modernity. It would be disastrous if Indian Muslims were to begin to believe in the promise of an imagined, make believe utopian paradise being propagated by Jihadist corporations all around them. Apprehensions of a minority induced by threat of majoritarianism make the community vulnerable to all sorts of false assurances. The only foil to prevent them from becoming victims of this insidious propaganda is for the Indian state to strengthen the alternative narrative enshrined in its secular constitution – that all citizens of the union are equal in all respects. It would be worthwhile to remember that that is the best insurance to keep the flock together.

AIR MARSHAL ANIL TRIKHA *PVSM, AVSM, VSM (RETD)*



Joined the IAF as a fighter pilot in April 1964. Has flown nearly 5000 hours on fighter and trainer aircraft. Trained as a flying instructor and deputed abroad for flying training of cadets.

Flew a number of missions during the 65 and 71 wars against Pakistan. Was 'Mentioned in Despatches' for conspicuous acts of bravery during the 71 war.

Served as Air Advisor in the High Commission of India in London from 1995 to 1998.

Subsequent appointments include

- Commandant of College of Warfare at Secunderabad,
- Air Defence Commander South Western Air Command
- Commandant National Defence Academy and
- AOC-in-C Southern Air Command.

Recipient of three Presidential Awards for distinguished service during peace time i.e. Param Vashisht Seva Medal, Ati Vashisht Seva Medal, and the Vashisht Seva Medal.

Retired from the Air Force in Jan 2004.

After retirement, appointed Chair Professor of 'Air Power and National Security Studies' in the 'National Institute of Defence Studies and Analysis' at the University of Pune until Sep 07.

Now writes on Strategic Affairs in various journals and newspapers and delivers lectures occasionally at different institutions.

The First World War – A Soldier’s Perspective

Major General Shashikant Pitre (Retd)

PREAMBLE

The First World War indented man’s consciousness as never before. It reshaped the political order in Europe. Four mighty empires of the Nineteenth Century were flattened – Hapsburg, Ottoman, Russia and Germany. Midway between the War the European history came to an end and the world history began. That was the period of Vladimir Lenin and Woodrow Wilson. Both repudiated the traditional standards of political behaviour and preached Utopian heaven on Earth. It was the moment of birth of our contemporary world, the dramatic moment of modern man’s existence. The paradox was that men were passionately engaged in war and hated it at the same time. They believed that mass was the secret of victory, but once invoked, it went beyond their control. Within couple of months of its commencement and particularly by the end of the first year, they all came to the stark realisation that the war cannot be won and still they went on with it for four long years. In every country, the rulers feared the consequences of ending the war more than they feared the consequences of continuing it. “They were pilots without chart blown before the storm and not knowing where to seek the harbour”, as an eminent chronicler of the war – AJP Taylor- puts it. The results were disastrous. Close to seventy million combatants were

ISSN 2347-9191 print

© 2015 Centre for Advanced Strategic Studies

CASS Journal, Vol. 2, No. 2, April-June 2015, pp. 69–83

pushed into the inferno of the Great War over four years, nine million of them died along with another seven million civilians. The Unknown Soldier was the hero of the War. This is the story of the foot soldier.

THE CAUSE

Great events have small causes. Archduke Franz Ferdinand, the heir to the Monarchy of Hapsburg married an ordinary countess Sophie Chotek on 28 Jun 1900. She could not become Archduchess. He discovered that the only way to accord her that status surreptitiously was to remain away from the capital, visiting to inspect the army units in his capacity of Field Marshal and the Inspector General of the Austro-Hungarian Army. It was one of these escapades on his marriage anniversary which brought him to Sarajevo on the fateful day of 28 June 1914 to visit the Army in Bosnia. Little did he know that he had fixed not only the date of his death, but also that of another sixteen million people. He was assassinated by a grammar school boy, Garrilov Princip of a Serb secret society. This was merely expression of the Serb anger, but proved to be the ignition of the World War.

MILIEU

Apropos the Holy Alliance between Prussia, Russia and Austria of 1815, German Chancellor Otto Von Bismarck negotiated a league of three emperors on October 1, 1873, but cracks soon developed over the Balkan policy. With Russia having quit, Italy joined in 1882 to form the Triple Alliance. In a counter move, France and Russia came together in 1892. Britain signed an agreement with France in 1904 and the Anglo- Russian Convention in 1907. 'Arms Race' ensued between 1908 and 1913, with the European spending on arms increasing by 50%. The annexation of the former Ottoman territory of Bosnia and Herzegovina by Austria in 1908-09 angered Serbia and its patron Russia. The First and Second Balkan Wars added to the simmering tension.

The assassination of Archduke Ferdinand gave rise to anti-Serb riots in Sarajevo. Austria-Hungary delivered an ultimatum to Serbia on July 23. Russia instantly reacted on July 24 by ordering general mobilisation. Serbia followed on July 28. Austria-Hungary declared war on Serbia

on July 28. Germany declared war on Russia on 01 August. She asked France to remain neutral and withdraw its army by ten kilometres to avoid any border incidents. Germany attacked Luxemburg on August 02. With Belgium refusing her to pass through, Germany declared war on her on August 02. The ‘July Crisis’ had exploded into European war by the beginning of August 1914.

The opposing sides soon ossified; the Triple Entente as the Allies on one side and Germany and Austria-Hungary as the Central Powers, on the other. The Allies were joined by Italy in 1915, Romania in 1916 and the US and Japan 1917. The Ottoman Empire joined the Central Powers in November 1914 followed by Bulgaria.

Austria-Hungary invaded Serbia as a reprisal for the Sarajevo assassination. However they were thrown back within two weeks. The Allies had tasted their first victory.

INITIAL STRATEGIES

All military powers in Europe believed that attack was the only effective stratagem in war. They were overlooking the lessons of recent wars- the Russo-Japanese War of 1904-5 and the two Balkan Wars of 1912-13. As a result of this faulty thinking, all militaries had only offensive plans. They hoped to win from the superior offensive spirit of their armies. ‘Mobilisation means war’, was the general concept. They were soon to rue their belief. The most significant lesson that the First World War brought out was that with the environment and the military wherewithal prevalent at the fall of the Nineteenth Century, defence and not attack was the predominant operation of war.

Germany’s concept was to knock out France in speedy six-week campaign before Russia could mobilise and threaten from the east. The plan evolved by Schlieffen, Chief of the German General Staff from 1892 to 1906, was named as Schlieffen Plan. It presupposed that the war must be won in the west. He appreciated that the short frontier between France and Germany was heavily fortified on both sides leaving no chance of quick victory. To its north lay Belgium, providing sort of a funnel through which the German Army could pass, then flood out beyond the French defences, encircle them by swinging south and attack Paris from the rear. Schlieffen believed that French will surrender if Paris

fell. He presumed that people will ignore the fall of Belgium and that Russia will take a long time to mobilise. He was convinced that such a movement was possible, a postulation which went horribly wrong.

France knew of the Schlieffen Plan. They had evolved Plan XVII to counter it, which envisaged mass attack to regain Alsace Lorraine with British forces stopping the German advance in the north. They thought that this could be achieved easily. As a matter of fact, the French military also wanted to attack through Belgium but their Government was against violating the Belgium neutrality.

Britain was its usual self. Its plan was called 'Business as usual'. It involved placing a token British force on the Continent to put up fight in the north and demonstrating Britain's support by starting a naval blockade to starve Germany. Britain then intended to seize German colonies. British military commanders did not agree with this concept. They wanted to take part and demanded millions of troops.

The underlying belief in everybody's mind was that any war would be of short duration. Soldiers were certain that they will be back for Christmas. Nobody in his wildest dream ever thought of a slogging match lasting fifty long months.

WESTERN FRONT

First three months on the Western Front witnessed war of manoeuvre. Germany attacked in the north, France attacked Germany in the south. Belgium provided no opposition. German armies cut through Belgium like a knife in butter and reached the Marne River by September 1914. Having achieved his first objective, General Moltke pulled out troops from the Western Front and sent them to the Eastern Front to guard against the 'faster-than expected' mobilisation by Russia. It has always been debated whether this decision became the reason for the ultimate defeat.

Germany and Britain met at Mons on Aug 23. The British forces met with initial success, but the British commander, General French failed to exploit the gap created between Germany's First and Second Army. When the Germans reached the Marne, half a million fled Paris, but General Joffre, the French commander, handled the deteriorating situation with equanimity. Entente counterattacked at the battle of Marne and pushed the German forces back to River Aisne.

Germans could have held their front at Marne but for Moltke's pessimism. On the other hand, though Joffre reacted well, he also lost the opportunity owing to his failure to hit hard. General Kluck, the commander of German First Army, had a breakdown and had to be changed. Then everybody, the German, British and French, tried to outflank each other. This led to troops and a line of trenches spanning from Switzerland to the Belgium Coast, famously called 'Race to the Sea'. The density of troops on this limited front was beyond any imagination. They were literally crammed. In 1916, the Western front had 38 British divisions, 95 French divisions and six Belgium divisions, a total of 139 divisions. Against this force, the Germans had fielded 117 divisions and 19 more arrived in July. End of 1914 saw a battlefield that despite millions of casualties did not change till 1918.

In 1915, the static war set in. Germans had advanced in the enemy territory and started building permanent field fortifications. Allies were determined to expel them, hence did not construct any permanent emplacements. Both sides attacked with higher and higher quantum of bombardment, but no major dent took place. Germans used Chlorine Gas for the first time during the Second Battle of Ypres on April 22, 1915. Germans got into the act of defending successfully. Allies realised that they needed more men and ammunition if they have to break the jinx. There were two schools of thought, whether to attack in east or in west. The 'Westerners', like British C-in C General Haig or French C-in C General Joffre believed that they could get a breakthrough in the west, while the 'Easterners' believed that operations in the Mediterranean to hit soft belly like Gallipoli will unnerve the enemy.

In 1917, Germans retreated from 1000 square miles of hard won territory to new defensive position called 'Hindenburg Line', built by half a million workers including Russian prisoners of war. Joffre was replaced by Nivelle, who planned to launch a massive attack with artillery and promised success. When he finally executed his plan in April 1917, the artillery bombardment fell on the front line, while main line of the pillboxes remained intact. The attack was a disaster. It led to a mutiny in the ranks, the rebellion hitting half of the French Army. 54 divisions refused to obey. One lakh were court-martialled, 23000 found guilty, 432 sentenced to death, 55 were officially shot. Nivelle was replaced by Petain.

Germany had taken recourse to a strategy of unrestricted submarine

warfare in 1915. The US merchant ship RMS Lusitania was sunk on May 07, 1915 with 128 Americans on board among the killed. The US demanded an end to attacks on passenger ships, which Germany had complied with. In January 1917, Germany returned to unrestricted submarine warfare and sank seven US merchant marine ships. About the same time, a telegram sent by Zimmerman imploring Mexico to join the Central Powers in return of help to recover the territories of Texas, New Mexico and Arizona under the American occupation was intercepted by the British and passed on to President Woodrow Wilson. An agitated Wilson declared war on Germany on April 06, 1917. Americans were initially reluctant to enter the war, but once they entered they were ruthless and intolerant. They entered not as part of the Allies, but as an associated power. They went to war so that America could remain prosperous and rich Americans could get richer. This converted the European war into a world war.

The war on the Western Front dragged on without decisive victory to either. The most grievous blunder both sides made was to attack where the enemy was strong, resulting in humongous loss of human lives, value and regard for which they had ostensibly lost. Brief accounts of three battles will illustrate this point: Verdun, Somme and Ypres.

In 1916, Germany began to think that they could win a war of attrition in the west against the French Army by bleeding it dry. They identified Verdun, a salient heavily fortified. Germans could bombard from three sides and inflict heavy casualties on the French who, they were certain, would hold on to it at all costs. The plan worked, but it was a double edged weapon. Soon it became a prestige issue. Just as it was impossible to convince French opinion that Verdun was not worth saving, so it became impossible to convince German opinion that Verdun was not worth taking. 115 divisions on both sides were cramped on less than five miles wide front. Strangely, it was the sole offensive in the entire war, where offensive cost less than the defence. Both sides suffered heavy casualties, French 3.15 lakh, while the Germans 2.81 lakh. It was the most senseless episode of the war, no prize to be gained or lost, only men to be killed and glory to be won. But Verdun became the symbol of French pride. French Army Chief, Petain said, "They shall not pass" and they did not. So Verdun was French victory. Falkenhayn, the German commander was removed and two stalwarts of the Eastern Front were

brought in, Hindenburg and Ludendorff.

Britain chose Somme with a similar intention. Haig was confident that the British artillery could circumvent German wire obstacles and well entrenched soldiers. It was specifically chosen because it was located between the defensive sectors of British and French, so that both could fight together. Haig fielded 40 British divisions and 25 French divisions. Foch, was sceptical, Robertson- the British Army Chief did not share Haig's optimism and Joffre- the French Chief was always in favour of stratagem of attrition. Haig was obstinate and showed scant regard for the strong fortifications built by the Germans in an area full of chalk where digging was easy. The Germans occupied high ground overlooking the Allies positions. Germans had dugouts 40 feet deep, secure from any bombardment. Haig opened the operations after five days of intense bombardment. They attacked on July 01, the bloodiest day in the British Army suffering 57470 casualties including 19240 dead. There was no headway. He brought tanks, which made their appearance for the first time at Somme on September 15, but were not effective due to technical faults and unsuitable ground. Last attack was on November 13. It marked a dismal end of a disastrous endeavour, which would never have been undertaken in the first place. The casualties were British 4.2 lakhs, French 2 lakhs and Germans 4.5 lakhs. Somme was an unredeemed defeat. It set a picture of helpless soldiers, blundering and obstinate generals and no achievement.

British attack on Ypres was the third case of reckless offensive. Haig decided to target Flanders. The Germans had occupied defences on a ridge. Sir Robert Plummer planned to blast the whole ridge in order to displace the Germans. Deep mines in the form of tunnels were dug more than 100 feet beneath the ridge. After an effort of two years, 19 deep mines were ready and millions of kilograms of explosives were stuffed inside. The preparations were complete by June 06, 1917. At ten minutes past three before dawn on 7th June, these were blasted. Two and half lakh men were lost and the result – British advanced by two miles. An exercise in sheer madness!

EASTERN FRONT

While the stalemate on the Western Front continued, war in Eastern Europe was in full swing. Russia planned invasion of Austrian Galicia and German East Prussia. While they were successful in Galicia, Germany

moved the 8th Army, which was the reserve for the Western Front. Led by Paul Von Hindenburg and Ludendorff, they started with the First Battle of Tennenburg from August 17 to September 02 and Russia was soon driven out of East Prussia. Russia's less developed industrial base and ineffective leadership were the main causes of its failure. Central Powers captured Warsaw on August 05, 1915. Despite Russian success in Galicia in June 1916, dissatisfaction over their conduct of war grew by leaps and bounds in Russia. The Russian Revolution succeeded. Bolshevik Party led by Vladimir Lenin demanded an end to the War. Armistice was signed between Russia and Germany in December 1917 and with the Treaty of Brest- Livovsk inked on March 03, 1918, Russia's participation ceased. It was some relief for Germany.

WAR IN THE BALKANS

Despite the Russian threat, Austria-Hungary spared one third of its army to attack Serbia. Austrians occupied Belgrade, the Serbian Capital but were driven out in the battle of Kolubaro. Bulgaria joined the Central Powers. They sent six lakh troops to conquer Serbia, which was then divided between Austria-Hungary and Bulgaria. In a counter-offensive, launched in September 1918, Serbian and French troops made a breakthrough. Road to Budapest and Vienna was cleared and Bulgaria collapsed.

OTTOMAN EMPIRE

Ottoman Empire joined Central Powers in August 1914, threatened Russia's Caucasian territories and Britain's communication to India through the Suez Canal. They carried out large scale ethnic cleansing of Greek, Assyrian and Armenian Christians in genocide. British and French undertook Gallipoli and Mesopotamia Campaigns. In Gallipoli, the Ottoman Empire repelled the Allies. In Mesopotamia, after the siege of Kut, British captured Baghdad. After defending the Suez Canal, British Expeditionary Force advanced across the Sinai Peninsula. In December 1914, Ottoman with German support invaded Persia, but by 1918 their campaign had ended in a failure.

General Allenby's 10th, 11th and Desert Corps won the battle of

Beersheba at the end of 1917 and later the Battle of Mughar Ridge. In early 1918, the Egyptian Expeditionary Force was replaced by the Indian Army units. Their integration was complete by September 1918. The Indians broke the Ottoman Forces at the Battle of Magiddo in September 1918. They captured Nazareth, Afrela, Baisan, Haifa and Daraa on way to Damascus. Armistice signed at the end of October ended the hostilities. It is notable that the Indian soldiers outnumbered the British at the beginning of the War- about 1.3 million soldiers and labourers. Total Indian force was 1.40 lakh on the Western Front and 7 lakh in the Middle East. A total of 48000 were killed and 65000 wounded.

“Jodhpur Lancers launched a fierce cavalry charge on Haifa and captured the city. The Lancers of Hyderabad and Mysore also made significant contribution. The three were immortalised on the entrance of the official residence of the Commander-in-Chief in Delhi as ‘Teen Murti’, which later became the residence of the first Prime Minister of India, Pandit Jawaharlal Nehru.”

ITALIAN FRONT

Central Powers launched a violent offensive on October 26, 1917. Ludendorff moved forces from the Russian front to France. Seven Austrian and six German divisions attacked. The Italian Army was routed in the battle of Carpetto and the Italian front collapsed. However, Austro-Hungarian Army was defeated in the Battle of Vittorio Veneto in October 1918. Austria-Hungary surrendered in November 1918.

Rumania joined the Allies in 1916 and launched attack against Austria-Hungary with Russian support. After initial success, they lost Bucharest to the Central Powers on December 6, 1916 and signed the Treaty of Bucharest on December 9, 1917. However, it renounced the treaty and re-entered the war on November 10, 1918. Rumania’s death toll was 7.5 lakh during the war.

BACK TO THE WESTERN FRONT

1918 saw American troops arriving in large numbers. Germans had won large tracts of Russian territory on the Eastern Front. They moved troop reinforcements to the west. A peace initiative sent by the British

Prime Minister, Lloyd George was turned down by Ludendorff. On the other hand, Ludendorff decided on a massive attack to break the back of the Allied Forces on the Western Front and win the war before the arrival of the US troops in large numbers. He had evolved a new strategy of short bombardment, attack in small groups, seek weaknesses, use reserves and go deeper. He launched Operation Michael on 21 March. It had initial success, German Forces pushing back French up to 65 Kilometres in places and reaching within 60 kilometres of Paris. Kaiser William II declared 24 March as national holiday. This led to creation of Supreme War Council of Allied Forces at the Dullens Conference. Foch was made the Supreme Commander. Haig, Petain and Pershing in command of British, French and American forces were placed under him.

Allied Forces now changed their strategy. Based on their experience, they used a combination of surprise, tanks, airpower and artillery. Artillery was used not for destroying bunkers but to provide covering fire as their troops assaulted. Ludendorff had dismissed the tank as a useless weapon platform and had not bothered to develop anti-tank weapons. Foch decided to use troops for counterattack, not for plugging gaps. He planned to allow Germans to advance and bring in mobility to restore the war of movement. Ludendorff planned to attack on May 27. 14 German divisions broke in, advanced ten miles a day, biggest since August 1914. By June 03, Germans had reached Marne. Foch did not use reserves. 54 German divisions assembled for an offensive on July 15. Foch was waiting for this opportunity. He struck at their exposed flank.

The 'Hundred Day Offensive' of the Allies began on July 20, 1918. Germans retreated across the Marne suffering 2.70 lakh casualties. The Battle of Amiens began on August 8. Ludendorff termed 8th August as the Black Day for Germany. Foch's pincer move pierced through the Hindenburg line. Foch now decided to hit at weak points and chose Cambrai. 456 tanks were assembled by British and attacked through fog. French 3rd Army attacked on August 10, 10th Army on August 17, British 3rd Army on August 21 and 1st Army on August 26. Ludendorff gave orders to withdraw from the Hindenburg Line and made peace offers to Austria and Belgium. French and American troops made the final assault with Meuse Argonne offensive on September 23 and the Battle of Mont Ridge. General Pershing, the American Army Chief

was yet to learn the lesson. He attacked a strong point and suffered one lakh casualties, but the attack broke the back of the German Army. Ludendorff asked for immediate armistice on September 29. The note was addressed to Wilson, not to Foch. When Wilson asked the generals to draft an armistice, Pershing differed with his President. He wanted a total victory. He was overruled. Foch wanted the Rhineland while British wanted German Navy. Both got what they wanted. Ludendorff collapsed under strain and was dismissed on October 26. He attributed the German defeat to a combination of attrition during 1916/17 and his blundered offensive in 1918, but primarily they were beaten by the Allies advances in technology and materials, artillery and superior tactical concepts.

Bulgaria signed the Armistice on September 29, Ottoman Empire on October 25, Austria on November 09, followed by Germany on November 11, 1918. War persisted for another seven months till the Treaty of Versailles was signed with Germany on June 28, 1919. League of Nations was formed on June 28, 1919 based on the Fourteen Point Programme authored by President Woodrow Wilson.

LAND WARFARE

As brought earlier, the initial ambitious offensive plans soon gave way to a slogging match across the trench line on the Western Front leading to a battle of attrition. The war began as a clash of 20th Century technology and 19th Century tactics. The trench line from Switzerland to the English Channel on the Western Front dictated the pace of the entire war. It was sort of a revolution in military affairs in the field of defensive operations. Wire obstacles were used on a large scale. Fatefully, the anti-personnel land mine, rampantly used in the Second World War was yet to arrive on the scene, else it would have further impeded the pace of operations.

Once the Poison Gas was used by the Germans during the Battle of Balimov on January 31, 1915, chemical warfare comprising use of Chlorine, Mustard Gas and Phosgene was liberally employed by all sides in violation of the Hague Convention. Chemical weapons accounted for 13 lakh casualties on both sides. The defenders countered the effect by using gas masks. The attackers soon realised that they were equally

susceptible to the effects of the gas and the masks interfered with their much needed mobility. During an attack across Loos coal fields, Haig confident of using the gas, was stunned when due to winds in wrong direction, his assaulting divisional commander gassed his own troops.

To break the deadlock, a new weapon platform in the form of Armoured Tractor was introduced. It was called a tank for reasons of security. Though it was not fully battle-worthy till 1917, it made its first appearance in 1916 in the battle of Somme, albeit Generals used it wrongly. Advent of the battle tank did little to break the jinx initially, but within a year, British produced them by hundreds. Later it was used in large numbers at Cambrai and led to the breach of the Hindenburg Line. French introduced the first tank with a rotating turret- Renault F1.

Artillery underwent a revolution in 1914. Till then the cannons were used in front positions and fired directly at the target. By 1917, indirect fire with gun became prevalent with supporting techniques for spotting and ranging. Counter-bombardment on the enemy gun positions also became routine. Germany was far ahead of the Allies in using heavy indirect fire. The German Army had 150 mm (6 inch) guns and 210 mm (8 inch) howitzers. French and British guns were of 75 and 105 mm calibre. British later developed 152 mm guns. Germans employed the Haber process of Nitrogen fixations for continuous supply of the gun powder. Germans developed the most powerful land based gun – a railway gun named 'Big Bertha'. They also developed 'Paris gun' reaching 105 kilometres with light shell weighing 94 kg. Guns and shells to feed them were produced in unimaginable numbers.

Trenches, machine guns, barbed wire, air reconnaissance and the modern artillery were the implements which brought the First World War to a stalemate. Commanders failed to develop tactics for breaching entrenched positions. Both sides tried to break the stalemate by using scientific and technical advances. By 1917, major armies modernised, made use of telephones and wireless communication. As a protection against fragments, modern steel helmets were introduced, French Adrian and British Brodie. The war also led to the introduction of a variety of automatic weapons and sub-machine guns. Flame throwers were introduced by the Germans to 'blow out' the enemy from the trenches.

The trench warfare phase on the western front recorded astounding

and humongous casualty figures - denigrating the value of human life to levels never witnessed before. The Verdun dual claimed 7 to 10 lakh casualties, Somme offensive cost 11.2 lakh casualties, while the Passchendaele operation accounted for 4 lakh casualties.

‘No man’s land’ – the area between forward trenches of the opposing sides – on the Western Front had shrunk to ridiculous proportions, one kilometre to 100 yards in places like Vimy Ridge. You could hear the conversation of the enemy and yet the men held on to their positions indefinitely.

Fixed wing aircraft was used by Italians in Libya in October 1911. Initially the aircraft were used for reconnaissance and scouting. No bombs could be carried because of the wooden struts. However as the war progressed, they were employed as bombers as well as fighters. On April 01, 1918, the Royal Air Force came into existence as the first independent air force in the world.

British generals were inexperienced. They had fought no war since the Boer War in 1871. Lloyd George, the British Prime Minister was contemptuous of generals. When the army was to be equipped with machine guns, he asked his military commanders, how many machine guns should there be in an infantry battalion. General Haig said ‘two’, Kitchener, the Secretary of War, promoted to the rank of Field Marshal raised it to four. Lloyd promptly juxtaposed, “Take Kitchener’s figure, square it, double it, double it again, that’s the number of machine guns”. It worked out to 64 machine guns in a battalion. The units were equipped with 43 guns each. Yet no civilian statesman contemplated taking over the direction of war himself as Churchill and Roosevelt were to do in the Second World War.

Though the First World War started with massive infantry charges, as the artillery improved, its lethal shrapnel forced the infantry to go into trenches causing the war to become static. The counter was the development of tanks and armoured vehicles to attack in mass followed by infantry. This was the precursor of the Panzer divisions of the Second World War. However the concept of strong defensive positions was not abandoned during the Second World War. The protracted campaigns like the Siegfried Line resulted in casualties as in the WW I. The difference was that it was not expected to remain static for long durations. Strangely, had the art of para-dropping been developed during the First

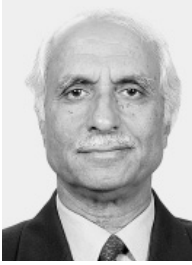
World War, it would have turned the static defensive battle on its head. Development of Electronic Warfare during the Second World War, albeit in its preliminary stage, made a major difference.

EPILOGUE

Germany paid a heavy price for its defeat. It was disarmed, left with no Air Force, virtually no Navy, no tanks, no guns and a control commission to ensure that this was enforced. The Dictate of Versailles left Germany politically humiliated, economically ruined and deprived of military power. German feeling of humiliation contributed to the rise of fascism, which led to World War II. However, they did not lose any territory, primarily because the war was not fought on their soil, except for return of Alsace- Lorraine to France and couple of villages to Belgium. German occupants of the rump Austria wanted to join Germany. French objected, but Germany did manage to acquire at least one Austrian. He was Adolf Hitler. It would have been better if Germany was permitted by France to have other six million Austrians instead of this one.

“As stated at the outset,” the Unknown Soldier was truly the uncrowned hero of the First World War. The inimitable Ludendorff called the British soldiers ‘Lions led by donkeys’, so much for the generals on both sides. As a matter of fact, the war was beyond the capacity of generals and statesmen alike. Clemenceau said, “War was too serious a matter to be left to generals”. Experience showed that it was too serious a matter to be left to the statesmen either.

MAJOR GENERAL SHASHIKANT PITRE (RETD)



Maj Gen Shashikant Pitre, a post graduate in Military Science and a Master of Engineering took part in 1965 and 1971 wars and in the IPKF in Sri Lanka during 1987- 90. He commanded an infantry brigade on the Sikkim border and in the insurgency infested area of Manipur and an infantry division on the Western Border.

After retirement, he has written widely in Marathi dailies on military matters and has to his credit about 350 articles published in the print media. His book on the Kashmir Imbroglio, titled “Domel Te Kargil” in Marathi was adjudged as the best book of 2001 by Maharashtra Sahitya Parishad, a prime literary forum. He has authored a book each on the Sri Lanka Conflict and on the Indo-China War of 1962. Other publications are a biography of Admiral B S Soman, both in Marathi and English, a biography of Lt Gen SPP Thorat.

General Pitre is the founder chairman of an ex-servicemen organization HORIZON dedicated to humanitarian demining, i.e. finding and destroying land mines. It has recovered over 1,00,000 landmines and rendered safe an area measuring over 1000 sq kms for rehabilitation.



Sri Lanka – The Past Is Ever Present

Brigadier R.R. Palsokar (Retd.)

INTRODUCTION

A new perspective has been brought to Sri Lanka's politics by the recent election of President Maithripala Sirisena, the breakaway candidate and the defeat of the powerful incumbent, Mahinda Rajapaksa. The country was earlier being seen as increasingly veering towards a triumphalist dictatorship in which the minority Tamils and Muslims were being permanently marginalized. The Rajapaksa doctrine in foreign policy, if it can be called that, was to keep India at a distance and to encourage China to invest critically in Sri Lanka's security. This helped Sri Lanka to keep India at bay and thumb its nose at western powers, which were being seen as hostile to the regime for seeking investigation into human rights abuses carried out by the Sri Lankan Armed Forces (SLAF) during the final days of the war against the Liberation Tigers of Tamil Eelam (LTTE). This policy was popular with the majority Sinhala community. The triumphalism of the Rajapaksa regime stemmed from the decisive defeat of the LTTE in May 2009 which brought to an end the civil war which had been raging for more than twenty five years. So confident was the previous regime that Mahinda Rajapaksa had called an election some two years before its term was over, supposedly on the advice of the 'royal' astrologer.

ISSN 2347-9191 print

© 2015 Centre for Advanced Strategic Studies

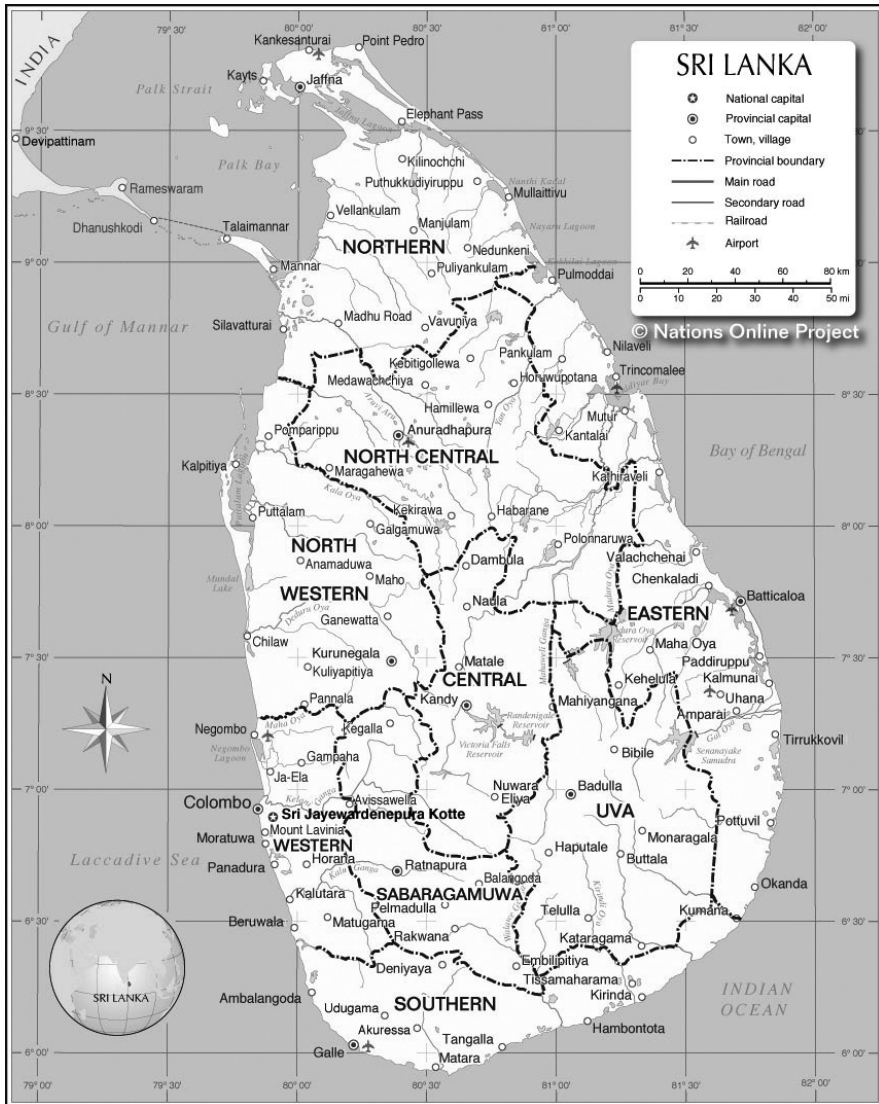
CASS Journal, Vol. 2, No. 2, April-June 2015, pp. 85-102

The election of President Maithripala Sirisena with the support of a rainbow coalition of Tamils, Muslims and the Sri Lanka Freedom Party, was dramatic and far more intriguing than any fictional political thriller. It has thrown up a new set of possibilities in Sri Lanka's future policies, both domestic – addressing the fears and demands of the minorities; and in foreign affairs where the influence of China is seen as reducing while strengthening the traditional relationship with India.

It is no secret that Sri Lanka's majority community, the Sinhalas, have long desired to keep the minorities particularly the Tamils in an inferior position. The country's past history and the devastating civil war from 1983 to 2009 has been the result of this policy. This has left the Island divided and it will require many years of patient reconciliation as well as development activities for the people of Sri Lanka to present a unified face to not only the outside world but also itself.

Discussing how this could be done, it is necessary to look at past history, the rise and nurturing of Sinhala chauvinism and the consequent beginning, growth and defeat of Tamil militancy. The ups and downs of Indo-Sri Lanka relations form the backdrop on which these events took place. This in turn leads to the examination of the Rajapaksa presidency, the recent elections of January 2015 and the prospects for reconciliation between Tamils and Sinhalas. Much of this will depend upon how India – Sri Lanka relations develop as also the China factor and the stance and role of foreign powers. This paper will discuss these issues in depth and is therefore divided into the following parts:

- a. Background to India – Sri Lanka relations.
- b. Rise and defeat of Tamil militancy.
- c. The effects of the Rajapaksa presidency.
- d. The presidential elections of 2015 and prospects of reconciliation.
- e. Sri Lanka's likely foreign policy challenges including balancing of its relations with India and China.



Source: <http://www.nationsonline.org/maps/sri-lanka-map.jpg> accessed on 22 Feb 15

INDIA – SRI LANKA RELATIONS

Sinhala Aspirations

Ceylon became independent from British rule on 4th February 1948. Its name was changed to Sri Lanka in April 1972 as a sop to chauvinism. It is confusing when sometime reference is made to Ceylon, at another time to Sri Lanka. Till 1972 everything is referred to as Ceylon or Ceylonese, subsequently it has become Sri Lanka.

It is the ethnic composition of the country coupled with the desire of the majority community to dominate that has brought Sri Lanka to this pass. Sri Lanka has a population¹ of approx 20 million, of which 75% of the population is Sinhala, 15% is Tamil, 9% are Muslims (generally Tamil speaking) and 1% are others, mainly of Eurasian descent. The Tamils are concentrated in the Northern and Eastern Provinces. This ethnic composition has sown seeds of conflict, which have exacerbated over the years. Additionally, at the time of independence, there were about half million Tamils of Indian origin, who were and still are concentrated in the central highlands in the plantations. Their numbers have increased over the years. They are known as the plantation Tamils. They are the descendants of indentured labour transported there in the mid-19th century to work in coffee plantations and later when coffee failed, to work in tea plantations. While the total number of Tamils is shown as 15%, they include plantation Tamils. The latter though form a different ethnic group.

At the time of Independence, Ceylon was a feudal society with an anglicized Sinhala land owning class. The Tamils, concentrated in the North and the East, inclined towards education and dominated the bureaucracy. They interacted with and took lead from Indian Tamils. The Muslims are concentrated in the East, though Tamil speaking, they claim and maintain a different ethnic identity. They have little in common with the aspirations of a Tamil Eelam.

The bulk of the population is Sinhala who are mainly Buddhist, but an influential section is Christian. After independence, Sinhala chauvinism came to the fore. The United National Party (UNP) was formed in 1948 and took over power from the British. Don Stephen Senanayake who was Prime Minister from 1947 to 1952 led it. There was so much

1. Census of 2012, quoted in Wikipedia.

cronyism that the UNP was derisively called the Uncle-Nephew Party. The one person in the original UNP, not connected by family to Don Senanayake was S.W.R.D. Bandaranaike. He left UNP in 1951 to form the Sri Lanka Freedom Party (SLFP). Here we see the first use of Sri Lanka or Holy Lanka. This was an unashamed sop to garner the support of the Buddhist clergy and the mass of Sinhalas who were Buddhists. The SLFP was not behind in cronyism. When Solomon Bandaranaike died, his wife Sirimavo succeeded him as PM. Since independence power has alternated between the UNP and SLFP.

One of the first acts of independent Ceylon was to disenfranchise the plantation Tamils and declare them stateless. The Ceylon Tamils wholly supported this act. Little did they realize that it would be their turn next to be discriminated against. This was just before Solomon Bandaranaike had formed the SLFP. The SLFP brought in the religious element to counter the pseudo-Anglicism of the UNP. It also provided a political role to the Buddhist clergy, who too own vast tracts of land, are wealthy and have tremendous hold over the common people. In fact Solomon Bandaranaike took extensive support from the Buddhist clergy to oust the UNP and come to power in 1956. In an ironical twist, a Buddhist monk murdered Bandaranaike in 1959. His wife, Sirimavo, then took his place. The Sinhala language had become the official language in 1956 and in a fit of excessive affirmative action by Mrs. Bandaranaike in 1970; Sinhala students were given admission to university at a lower set of marks than Tamil students. "The function ... was precisely to divert the pent-up anger of the poor against their class brothers of another ethnic group: the Tamils ... It was ... the historical absence of a genuine nationalistic movement against the British which permitted a ... pseudo-nationalist movement against the Tamils."²

The need to adopt populist measures was due to the fact that the economy was deteriorating and the JVP, Janata Vimukti Peramuna (People's Liberation Front), a peasants' movement formed in 1965 was gaining in strength and challenging the established order. The JVP led by Rohan Wijeweera undertook an armed revolt in April 1971. After some initial successes the revolt was put down with great brutality and

2. Robin Blackburn, Ed., *Explosion in a Subcontinent, The Ceylonese Insurrection* by Fred Halliday, (Penguin Books, 1975), pp. 169-170.

use of force. India then had provided some token support. In the midst of this unsettled political environment, the minority Tamil community that had flourished under the British was increasingly sidelined and felt threatened.

Rise of Tamil Militancy

The 1948 Citizen's Act had disenfranchised the plantation Tamils. The government of Ceylon demanded from India that they be repatriated. By the Shastri- Sirimavo pact of 30th October 1964, 50% had been returned to India over the years. But approximately 5 lakhs still remained, without vote, without citizenship. (This remained one of the outstanding issues between India and Sri Lanka till 2003, when the Sri Lankan government granted citizenship rights to all plantation Tamils and thus closed a vexatious issue in one stroke). The Ceylon Tamils were not perturbed because their leaders expected to carry on as before in an independent country. But the Sinhala were afraid that Sri Lankan Tamil identity would be subsumed by Indian Tamil identity. This is a major fear that still preys on Sinhala minds. There was also a feeling that the British had favoured the Tamils and that they had been given more than their fair share of government jobs and education. Hence Sinhala was made the official language and university entry made simpler for Sinhala students. In the latter case, the Tamil share of university entry dropped from 27% to 7%. In effect it meant 93% reservation for Sinhala.

In this cauldron, it was not surprising that Tamil nationalism should raise its head. On 14th May 1976 various organizations representing Sri Lankan Tamils, Indian Tamils, Tamil Muslims as well as other leaders met and formed the Tamil United Liberation Front (TULF). The avowed aim of TULF was to work for a Tamil Eelam by taking part in the elections of 1977. Meanwhile, militant groups were springing up in Tamil predominant areas. Velupillai Prabhakaran had started the LTTE in 1972 and by personally killing a policeman (he happened to be a Tamil) in Jaffna in 1975 started the group's bloody history.

The years after independence had seen many ethnic riots, but the worst riots took place when in July 1983, when 13 Sinhala soldiers were killed by Tamil militants in Jaffna and the then President J.R. Jayewardene enacted a legislation to make it unconstitutional for any party to agitate

for a separate state. By this time, a number of Tamil militant groups were operating. They met under the aegis of India at Thimphu in July 1984. The militant groups were also in direct competition with each other. This made the task of the Sri Lankan government easier in dealing with them, because they could play one off against the other. All militant groups sought and received support from political parties in Tamil Nadu. The LTTE, being by far the most disciplined, organized and also the most ruthless, came to the fore. But matters were soon to come to a head. In the fighting that followed, by July 1987 the Sri Lankans had blockaded Jaffna and for supposedly humanitarian reasons the Indian Air Force dropped food. To resolve the crisis, the Indo-Sri Lanka Accord was signed on 29th July 1987 and the Indian Peace Keeping Force (IPKF) was inducted immediately thereafter. The intervention ended when the IPKF was withdrawn by the Indian government in March 1990.

The IPKF Intervention³

The Indian military intervention in the ethnic conflict between Tamils and Sinhalas was a sorry episode, made sorer by poor political and military leadership which did not give clear cut directions to the IPKF. The IPKF in turn suffered from lack of preparation and training, ill suited weapons and equipment, as also from weak operational and tactical direction. The operations, once they commenced, acquired a life of their own without an end goal to strive for and caused unnecessary casualties, till a changed government in Delhi decided to cut losses and pull out, leaving behind a situation that was worse than what it was before the IPKF was sent in. It required the Sri Lankan government and its armed forces another twenty years to wear down and then decimate the LTTE. This in turn left the minority Tamil population in a more precarious predicament than ever before.

The IPKF tale is simply told. The Indo-Sri Lanka Accord between the Indian and Sri Lankan governments was signed on 29 July 1987. In Sri

3. This article is dedicated to the memory of the 1240 officers and men of the IPKF who gave their lives in the service of the nation. Their sacrifice has never been acknowledged in the manner it should be.

Lanka the Accord was largely seen as surrendering to Indian hegemony and the bulk of the population and the armed forces in particular found it humiliating. The Accord got off to an inauspicious start when the departing Rajiv Gandhi was assaulted by a member of the Sri Lankan guard of honour. (It was only the young prime minister's quick reactions which prevented any real injury, but the deed was done). The Accord provided for the surrender of weapons by the LTTE, cessation of hostilities; and restricting the Sri Lankan Armed Forces to their barracks in the Northern and Eastern provinces. It also provided for the adoption of the 13th Amendment to Sri Lanka's Constitution which required the devolution of more autonomy to provincial assemblies meaning mainly the Tamils and constituting the Northern and Eastern provinces into one administrative unit. This entailed the conduct of elections to the provincial assemblies supervised by the IPKF. Once this was done, the IPKF would return home. So it was thought.

The Accord was accepted with equal suspicion by both the LTTE as well as the Sri Lankan government. The LTTE reneged on its commitments as quickly as possible, having been insincere from the start. By October 1987 fighting had broken out between the LTTE and the IPKF. The latter was caught by surprise by the ferocity and resolve of the LTTE and a panicking Army HQ in Delhi inducted additional troops pell-mell into the Jaffna Peninsula. Some Infantry units, after a long and uncomfortable flight from Central India, were launched into battle with no rest, little preparation, virtually no information about their enemy or the terrain, literally within hours of landing and suffered predictably. Finally over a period of weeks, sheer brute strength of the IPKF prevailed and Jaffna was secured. This forced the LTTE to disperse into the interior portions of the Northern and Eastern Provinces.

By February 1988, a recognizable IPKF deployment was in place. There were four roughly autonomous divisional sectors patterned after the geography of the Tamil predominant provinces. One oversized division was responsible for Jaffna peninsula and another, with its HQ at Vavuniya was responsible for the Vanni sector, which includes the districts of Mannar, Killinochi, Mullaittivu and Vavuniya. The Eastern Province was the responsibility of two divisions, one each based at Trincomalee and Batticaloa. HQ IPKF, the field force HQ operated in isolation from the safe environs of Madras as Chennai was then called. The Indian Air Force and the Navy had only secondary roles.

The tasks of the IPKF as seen from the Operations room of Army HQ in Delhi were simple: dominate the LTTE to render them ineffective to allow the conduct of provincial elections to take place, supervise the elections and then get out. The little local difficulty of militarily subduing the LTTE, holding the Sri Lankan government to their promises and the maintenance of the IPKF away from the shores of India was left to lower formations. HQ Southern Command responsible for administration was at Pune, as distant and divorced from operational realities as Army HQ. What had not occurred to armchair strategists at Delhi was that the LTTE and the Sri Lankan government might be more interested in driving their own agendas. Both these parties to the conflict were confident that the IPKF would depart sooner than later and then they would have to settle the issue between them. The LTTE was very clear – it had to resist the IPKF and remain in being to take on the Sri Lankans. The Sri Lankan government on its part saw the IPKF intervention and their own sidelining as an opportunity to finish the JVP's second insurrection which was then in progress. Then they had no option but to battle the LTTE in a fight to the finish.

The progress of operations after the Jaffna battles followed (what now seems) a predictable course. The Trincomalee and Batticaloa sectors had little LTTE presence and the problems there were more political in handling the aspirations of Tamil, Muslim and Sinhala populations. Jaffna peninsula was kept under domination by saturating the area with troops. The main fighting took place over 1988-89 in Vanni and mainly in the LTTE stronghold of Mullaittivu.⁴ By end of 1989 it was decided that the IPKF would return and it did so over six months between October 1989 and March 1990.

The IPKF operations suffered from serious deficiencies. Besides the quality of senior leadership⁵, the location of controlling HQs was the first of these. Army HQ was in Delhi, Southern Command HQ in Pune and HQ IPKF in Chennai, with the fighting troops in another country.

4 The author served in the IPKF and commanded 7 Infantry Brigade with Headquarters in Mullaittivu from December 1987, till the Brigade was withdrawn as part of the overall plan in December 1989. The author's experiences have been recorded in his book, 'Ours Not to Reason Why', published by Power Publishers, Kolkata in 2012.

5 Sardeshpande, S.C. Lt. Gen. (Retd.), "Intervention in Sri Lanka: Lessons", Defence Journal, Vol. 1(1), Aug 1993, Kartikeya Publications, Meerut, NOIDA.

This logic defies comprehension and created a 'us versus them' mindset. The fighting troops who were in contact and suffering casualties were denied suitable weapons, AK 47 rifles in particular, radio sets suitable for operations in the jungles and even bullet-proof jackets for the troops. It now seems obvious, though it did not appear to participants then, that for the Army the IPKF operations were a sideshow, even though the IPKF in the end lost over 1200 killed and correspondingly a large number wounded. Needless to say, the senior commanders stayed in India and passed the blame on to their subordinates who were doing the actual fighting. The civil government, taking its cue from the military hierarchy, lost interest quite quickly. The most telling commentary on this sorry state of affairs is that the Sri Lankans have erected a memorial to the IPKF in Colombo but the Indian government remains unburdened of such a necessity.

Defeat Of The LTTE

In the latter part of 1989, when the withdrawal of the IPKF was yet to be decided, the newly elected President Ranasinghe Premadasa had threatened that if the IPKF did not leave, he would order his army to throw them out. This was bluster, but the President made common cause with the LTTE who were now on their last legs and decided they would resolve their differences among themselves without seeking India's help. The moment the IPKF left the warring parties went back to fighting. The LTTE, having fought the IPKF for more than two years were more battle-hardened and caused great damage to the Sri Lanka's armed forces (SLAF). However, the LTTE, over-reached themselves when they murdered former prime minister Rajiv Gandhi while he was campaigning at Sriperumbudur near Chennai in May 1991. Relations between the Indian government and the LTTE could never be the same after that and this was one of the reasons for the subsequent defeat of the LTTE.

In the period that followed, the Eelam war ebbed and flowed. Simplifying, it can be said that from 1991 to about 2001, the LTTE held the upper hand and since the SLAF were unable to defeat them, the LTTE in effect ran an Eelam in their area. It was a fascist dictatorship at the best of times. In 2001, an uneasy ceasefire was declared with international mediation and this sputtered on with talks, violations

of ceasefire and so on till 2006. The international community by this time had lost patience with LTTE's continued violence and complete disregard for peace efforts and in May declared the LTTE a global terrorist organization. This allowed the imposition of restrictions on LTTE movement outside Sri Lanka, freezing of their accounts and cessation of all aid.

Earlier in 2004, the Sri Lankans gained a major advantage when they were able to wean away the LTTE's commander in the East, Colonel Karuna. This allowed the Sri Lankans to recapture the Eastern Province thereby restricting the LTTE to the North. The Tsunami of 2004 had also devastated LTTE's infrastructure which was mainly based on the Eastern seaboard from Jaffna to Mullaittivu. We shall never know what the extent of the real damage, but there is no doubt that it was a great blow to the LTTE. Mahinda Rajapaksa, who had become prime minister in April 2004 with Chandrika Kumaratunga as President, finally became President in November 2006. Whatever his other deficiencies, he was the right man to orchestrate the defeat of the LTTE.

Hostilities recommenced in November 2005 and the Eastern Province was cleared. The initiative now passed to the Sri Lankans. From 2007 onwards, despite LTTE attacks the Sri Lankan navy started interdicting LTTE ships bringing arms and ammunition. It is very likely that the Indian government was helping by providing intelligence. In September 2007 the final assault on LTTE territory began and the Sri Lankans rolled up the LTTE defences from west to east starting with Mannar. Killinochi, the so called capital of Eelam was taken in November 2008 and the LTTE was progressively hemmed into the Mullaittivu pocket. After bitter fighting, the last of the LTTE resistance was broken on 17 May 2009 when Prabhakaran's body was finally found. These few words hardly do justice to the intensity or ferocity of the fighting which took heavy toll on both the belligerents. Peace had returned but at great cost and brought in new problems which the Sri Lankan is still facing.

THE RISE AND DECLINE OF THE RAJAPAKSAS

The end of civil war did not end Sri Lanka's travails. President Mahinda Rajapaksa who had prosecuted the war against the LTTE with great resolve was rightly feted as a victorious hero by the majority

Sinhala population. This fact itself carried in it the seeds of the President's downfall. How did this happen? After its total victory in May 2009, the Sri Lankan government had to resolve many contentious issues. These were: one, reconciliation of the Tamil population; two, restoration of normal life in the war torn Northern Province; three, rebuilding of the economy; and last but not the least, restoring Sri Lanka to the life of a normal peaceful country with good relations with its neighbours and international allies. Unfortunately, a spirit of triumphalism pervaded the bulk of Sinhala population and reconciliation with the Tamil population was not given priority, causing further resentment.

Reconciliation with the Tamil Population

The Eelam war had devastated the Northern Province. Agriculture was in ruins, there was no industry, all means of communication had been destroyed and the indiscriminate use of landmines had made large parts of the province unsafe. Additionally, the Tamil population first under the iron heel of the LTTE and now under the victorious and insensitive Sinhala soldiers was unable to resume normal activities. In an effort to root out all hidden LTTE cadres and sympathizers, the Sri Lankans showed little concern for human suffering that resulted.⁶ There were many 'disappearances' which led to charges of human rights violations. Landmines clearance still continues. To make matters worse, army check posts, war memorials and Buddhist temples have sprouted all over Tamil areas. This is hardly conducive to reconciliation.

Restoration of Normal Life in the North

Visitors who have travelled to Jaffna speak of bustling crowds and normal activity. The railway line between Colombo and Jaffna has also been restored. But the overwhelming military presence remains and much needs to be done. The economy of the Tamil areas is still dependent on outside aid and given the mutual suspicion between the communities, progress is slow. In the Sinhala predominant south of the country, life has returned to normal more quickly, but the dominance of the Rajapaksa family had spread an undercurrent of distrust. Look at their influence on

6. Samanth Subramanian, "This Divided Island—Stories from the Sri Lankan War", (Gurgaon, Haryana: Penguin Group, 2014)

Sri Lanka's polity. President Mahinda's brother, Gotabhaya – a former Colonel, was the Defence minister, another brother Basil was the minister for economic development, a third brother Chamal was 'elected' Speaker of Parliament. Son Namal, also a member of parliament, was being groomed for higher responsibilities. Numerous other members of the extended family were appointed to senior positions in state institutions. Naturally this caused great resentment.

Further, though the Lessons Learnt and Reconciliation Commission (LLRC) had been appointed, Sri Lanka was castigated more than once by the UN Human Rights Commission for discriminating against the Tamils. Mahinda Rajapaksa used the UN resolutions to paint Sri Lanka as victim of Western 'colonialists', but the problem did not disappear. Additionally, the Rajapaksas stand accused of supporting the militant Bodu Bala Sena (Buddhist Power Force) and imposing restrictions on press freedom. A prominent editor was murdered; correspondents pressurized, threatened and so on.⁷ While this was happening, the world including India looked on helplessly. Mahinda Rajapaksa also attempted to counter India by wooing China, further muddying the situation. Finally, possibly because of hubris, an early election was called and unexpectedly Mahinda Rajapaksa was defeated, with a new president Maithripala Sirisena installed in January 2015.

CHALLENGES BEFORE SRI LANKA

The newly elected President faces daunting challenges. The first of these is the devolution of more powers to the Tamil predominant provinces without alienating the majority Sinhala population. The reconciliation of the minority communities, Tamil and Muslim, must be the President's first priority. Second is the economy and third is the handling of relations with the international community, mainly India and China.

Assimilation of Minorities

Enough has been said about the problems of Tamils and Muslims. However, despite professions to the contrary, the Rajapaksa regime was

7. Robert D. Kaplan, 'Monsoon – The Indian Ocean and the Future of American Power', Random House, New York, 2010, pp. 194-195.

never able to win the confidence of the Tamils. The devolution of powers to the Provincial Assembly of the Northern Province has not taken place. The Indo-Sri Lanka Accord of 1987 had included the agreement that the 13th Amendment to the Constitution which allows for greater autonomy to provinces would be passed. In fact the 13th Amendment was passed but its implementation after the end of the civil war was never sincerely effected. The dissonance started with the appointment of the Governor. The earlier incumbent was a former military man and the elected TNA's (Tamil National Alliance) complaint was that the Chief Minister was hampered at every step. In the recent elections, the TNA supported Sirisena's candidacy and now a non-military person has been appointed as governor, but the TNA has muddied the waters by passing in the Assembly a resolution seeking a UN led probe into the alleged genocide against Tamils during the last stages of the civil war. This is hardly conducive to reconciliation. It remains to be seen how President Sirisena handles this explosive issue.

There is a tendency among the Sri Lankan elites to see an Indian hand in all Tamil problems. The frequent utterances of the Dravidian parties of Tamilnadu lend credence to such suspicions. However, it needs to be said that there is less concern among them for Sri Lankan Tamils and more for vote bank politics. The role of Sri Lankan Tamil diaspora also exacerbates matters and hinders reconciliation. While the idea of Eelam is dead within Sri Lanka, it is not uncommon to hear of it among non-resident Tamils. Not only is this a chimera but it also prevents a reasoned dialogue. If Sri Lanka's Tamils have to take their rightful place in their country's polity, the outsiders both in India and abroad will have to take a more nuanced and reasonable stand. Presently there are no signs of this happening. Expect the cauldron to keep bubbling.

The estrangement of the Muslim community should be easier to address, given their lesser share of the population and the fact that at no stage did they seek Eelam. The Muslims, though Tamil speaking are mainly traders with little interest in Tamil politics. During the civil war they were persecuted by both the LTTE and the Sinhalas. After the end of the war it was expected that the Muslims would assimilate quickly into the country's normal life. However, the rise of Bodu Bala Sena which is a militant and aggressive Buddhist party has created unnecessary tensions with the Muslims by attacking them on flimsy charges. Matters were

made worse by the apparent support and encouragement given to the Bodu Bala Sena by members of the Rajapaksa regime. For President Sirisena, improving relations with the Muslims is a low hanging fruit and it should be relatively easy to draw the Muslims into the country's polity.

Island Economy

Sri Lanka's economy has been battered by the civil war and the Rajapaksa government was able to attract foreign aid. This has made noticeable difference to the southern economy by improvement of communications and other developmental activities. However, debt servicing is expected to commence by the end of this year and according to some estimates, almost 75% of the national revenue will have to be utilized for this purpose. One major sticking point is the unfavourable balance of trade with India. Sri Lanka's trade with India comprises almost 45% of its total trade. The Government of India thus has a major responsibility in helping Sri Lanka rebuild its economy. This dependence on India, whether for reconciliation with the Tamils or to stabilize its economy, forces a big brother role on India with its concomitant negatives. It needs to be said that Indian attitudes towards Sri Lanka in the period up to 1991 were hardly conducive to invoking confidence and good neighbourliness.

SRI LANKA'S INDIA CHALLENGE OR INDIA'S SRI LANKA CHALLENGE

Since the time of independence, India has always loomed large in Sri Lanka's affairs. First it was the issue of plantation Tamils, then that of support to Tamil militants and the subsequent military intervention of the IPKF. All these served to reinforce suspicions. Some of India's envoys did not help matters. One particular worthy was commonly referred to as 'Viceroy'. Be that as it may, it was expected that the end of the civil war will help stabilize relations between the two unequal neighbours. This did not happen because Mahinda Rajapaksa chose to play the China card to neutralize Indian influence and pressures. There is little doubt that he succeeded.

The two main issues which bedevil Indo-Sri Lanka relations today are reconciliation with the Tamils and the Indian fear of Chinese

presence in Sri Lanka. The election of President Maithripala Sirisena and the symbolic gesture of his first foreign visit being to India, suggests a change of course in Sri Lanka's policies. The statement in the Sri Lankan parliament by the Prime Minister that the 13th Amendment will be implemented in letter and spirit should go a long way in salving Tamil consciences. The Sri Lankan government will find India a willing partner in bringing Tamils into the mainstream of the Island's politics. However the road will be long and narrow and full of pitfalls. It remains to be seen as to how this progresses.

The China problem is more contentious and will require careful handling by both Sri Lanka and India. Two main controversial points are one, the development of Hambantota port and two, the Colombo port project including the docking of a Chinese submarine there. India would do well to be conscious of past history and cautious in its reactions to what are essentially Sri Lanka's sovereign decisions. It is not as if the Chinese are making their first forays into the Indian Ocean. In the 14th and 15th centuries C.E. Chinese ships used to sail up to Ceylon for trade and the Chinese occupied Ceylon for thirty years in the 15th century. Yet, as the Chinese are likely to find out sooner rather than later, the development of Hambantota port does not guarantee it permanent welcome in Sri Lanka. This will depend upon the government of the day. Similarly, it would not be easy for the Chinese to dominate the Indian Ocean. There are many ifs and buts which will hinder the Chinese. Indian strategists should be wary of any hastily thought out decisions; the IPKF episode should serve as a cautionary reminder. India on its part must ensure that all its actions are in the genuine interests of the Tamils (as opposed to vote bank politics) and should aid reconciliation. Embarrassing the Sri Lankan government is unlikely to help India. That is the bottom line.

CONCLUSION

The people of Sri Lanka have suffered greatly due to the civil war. Whatever the reasons, alienation of the minority population resulting in the rise of Tamil militancy and the subsequent death and destruction of the civil war, have left the Island nation with a hard task ahead. For this they need all the help they can gather. India and the international

community should help rather than chastise.

On its part, the Sri Lankan government has to recognize that confrontation is unlikely to resolve problems. It can only exacerbate matters. The election of a new president has raised hopes not only within the country, but also around the world and particularly in India.

Sri Lanka, due to its strategic location on the tip of southern India and astride the east-west trade routes in the Indian Ocean cannot help but be drawn into big power rivalry. China and India may not be natural enemies, but they are adversaries in the twenty-first century. It is too early to say how this dynamic will play out. Suffice it to say that Sri Lanka will have to be conscious of this in formulating its policies, both domestic as well as in external relations. As the Chinese would say, these are interesting times.

SELECT BIBLIOGRAPHY

- **Das Gautam & Gupta-Ray M.K.**, *“Sri Lanka Misadventure, India’s Military Peace Keeping Campaign, 1987-1990”*, Har-Anand Publications, New Delhi, 2008
- **Deshmukh B.G.**, *“A Cabinet Secretary Looks Back”*, HarperCollins, India, 2004
- **de Silva K.M.**, *“Sri Lanka and the Defeat of the LTTE”*, Penguin Books, India, 2012
- **Dixit J.N.**, *“Assignment Colombo”*, Konark Publishers, Delhi, 1998
- **Jeyaratnam Wilson A.**, *“The Break-up of Sri Lanka: The Sinhalese-Tamil Conflict”*, Univ. of Hawaii, 1989
- **Kaplan Robert D.**, *“Monsoon – The Indian Ocean and the Future of American Power”*, Random House, New York, 2010
- **Palsokar R.R., Brig. (Retd.)**, *“Ours Not to Reason Why”*, Power Publishers, Kolkata, 2012.
- **Pratap Anita**, *“Island of Blood”*, Viking, Penguin Books, India, 2001
- **Sardeshpande S.C., Lt. Gen.**, *“Assignment Jaffna”*, Lancer Publishers, New Delhi, 1992
- **Subramanian Samanth**, *“This Divided Island–Stories from the Sri Lankan War”*, Gurgaon, Haryana: Penguin Group, 2014
- **Tharoor Shashi**, *“Pax Indica – India and the World of the 21st Century”*, Allen Lane, Penguin Books, India, 2012

BRIG. R. R. PALSOKAR (RETD)



Life member of CASS, is an Infantry officer who served with the IPKF in Sri Lanka and commanded a Brigade in the Mullaittivu sector in Vanni in the Northern Province. His Brigade saw some of the heaviest fighting in the citadel of the LTTE, in the very same area where the LTTE chose to make its final stand. His knowledge of Sri Lanka and its ethnic conflict is not only first hand but also personal. He now considers Mullaittivu, where he lived for two long years, as his 'native place'.

He is also a prolific author who writes in both English and Marathi and his articles on national security and international affairs appear regularly in Marathi and English newspapers and periodicals. He holds a M.Sc. from Madras University, M.S. from US Army's Command and General Staff College, Fort Leavenworth, Kansas and a psc from the Army Staff College at Camberley, UK. He retired in early 1993 and is settled in Pune.

Second Line Of Defence

Captain S. V. Subbedar

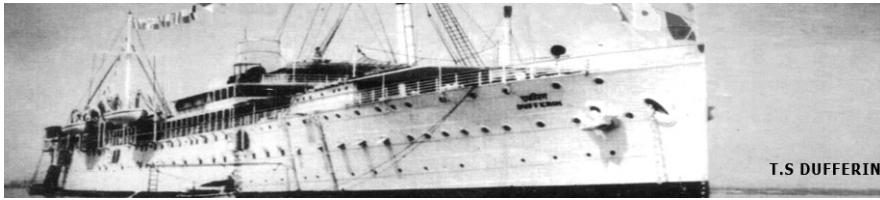
This term was coined for the Merchant Navy in World War I when merchant ships, propelled by power, for the first time assisted movement of wartime effort all over the world. World War II saw even more of the same. Today, Merchant Shipping is the first, the most extensive and the most important line of modern World Trade. 99% of world trade is shipping dependent. Trade between different nations has increased exponentially and brought diverse economies and cultures closer to each other. In fact Merchant shipping is the catalyst that brought the three synergetic factors economy, technology and communication together to virtually erase geographical distances and blur physical differences and can be credited with making the world a global village. Merchant shipping is the “behind the scenes” reason for the ready, easy and affordable availability of food, raw materials, fuel, finished goods..... you name it and the merchant marine moves it! Sadly, very few people know anything about it except the very romantic ideas perpetuated by those on shore...that sailors are forever drunk, have a girl in every port and make or used to make a lot of good tax free money!

If it were not for shipping and the seamen who 24x7 battle the force of nature to safely move global freight quite silently, half the world will starve and other half freeze. From nappies to nuclear armament goods move from one place to another by ship. The ship is the tool. Behind its running are brave officers, engineers, seamen and a Captain braving

ISSN 2347-9191 print

© 2015 Centre for Advanced Strategic Studies

CASS Journal, Vol. 2, No. 2, April-June 2015, pp. 103-109



adverse weather conditions, leading lonely lives away from home and hearth, missing all important milestones in family life, in the most unnatural and difficult conditions that people on land cannot even begin to fathom.

The ship is the first known mode of transport, and was in use even before the discovery and invention of the wheel and steam engine. The discovery of Americas, Goa, Australia happened only because of Mercantile Marine activity. India too has had its share of renowned great sailors like Angre, Rajendra Chola, Chanakya. India is also home to the earliest known ship building yard near Surat – The excavation at LOTHAL shows the remains of a shipyard and port at least 3000 years old.

I started my tryst with the Merchant Navy after completing my 12th by joining Training Ship Dufferin in Mumbai. This was a World War 1 troop ship, commissioned as a training ship in 1927, long before NDA, & IMA were even thought of! Sailors trained on this ship have been plying the oceans for more than three quarters of a century!!

Here in Pune lives the longest living Indian Maritime Officer. Capt. T. Rozario, 94 years young, who is a Second World War veteran, and was torpedoed and marooned on an island off Malaysia.

To join the Merchant Navy, one has to clear an All India entrance test. To be eligible to appear for this test, one needs to have cleared X+2 with 65+%, with physics Chemistry and Maths. This puts one on a training ship for 2 years. 2 more years of training at sea as a cadet qualifies one for the First Certificate of Competency issued by the Directorate General of Shipping, Govt. of India (DG Shipping) as per Internationally agreed Standards. Dufferin produced great mariners both for England, our navy and international shipping generally. Admirals Kataria, Soman, Krishnan, Karmarkar, Awati, Nadkarni, Samson, Gandhi, were all ex Dufferin Cadets. Dufferin has been now replaced by a concrete establishment called TS Chanakya in Nerul.

Since due importance was not / is not attached to the merchant marine, because it works so silently, the first training ship of India was not considered important enough to be preserved as a museum of marine history and sadly went to the graveyard.

We can be proud of the fact that Indian Merchant Marine officers are at the helm of almost all shipping companies in the world. It takes about 12 years to become a Captain (Master). His engineering counterpart is a Chief Engineer who also comes from a parallel training institution in Kolkata, the DMET, or is a direct BE Mech graduate.

Seamen begin their careers after the Xth. standard, in a pre-sea training institution. Unfortunately, private training institutions for seamen, navigating officers and marine engineers have mushroomed everywhere, with promises of a rosy and adventurous future, and people are getting taken in. They are able to satisfy neither the standards of quality of training, nor the basic requisites like on board training, since the number of on board training berths is limited, because the number of ships is limited. Just as one cannot become a certified pilot without completing the required air time before appearing for qualifying examinations conducted by the DGCA (Directorate General of Civil Aviation, Govt. of India), one cannot become a seafarer without completing internationally agreed minimum sea time on ship for every rank examination conducted in India by the DG Shipping. I am an approved external examiner for aspiring Masters. Passing marks and result % is predetermined by the government like it is for the CA examination. Captains, officers, engineers and seamen are freely accepted in all countries that are members of the International Maritime Organization, a UN body in London dealing with maritime affairs, like civil aviation or health are represented by ICAO, WHO respectively. I have been privileged to serve with the IMO, and did so from 1989-93.

Life at sea is becoming better with technological advances, but in the vastness of the ocean, a ship is like a little bath tub being thrown around in the water, at the mercy of waves ; It rolls and pitches, often tilting 65 degrees to the vertical; For days on end, no land can be sighted, and sometimes huge waves almost engulf the spec of metal. Often, because of the rolling and fickle weather conditions even cooking becomes a challenge; Sailors have to stand at all times with feet 2 feet apart, and

rock gently with the ships undulations just to stand upright; Many times, the sea is as calm as a swimming pool and then life is a dream, almost like going on a cruise. The experience of seeing the sun rise in clear skies and seeing it set through a hundred shades of red, or the moon rise in midnight blue skies, and suddenly play hide and seek behind clouds that appear out of nowhere, being able to identify Venus rise and set (the morning and evening star), being able to point out all the constellations, breathing completely pollution free air, with only the deep blue waters below and the limitless blue sky above, more than makes up for the time spent braving rough weather! But it does make every seafarer respect the might of nature, and you will almost never find an atheist seafarer.

While sailing across the different oceans, no two days are identical; sometimes, there's no sun shine for days, and sometimes, we sail through crystal clear waters flanked on either side with picture post card perfect landscapes like in the restricted waters of Canada and Scandinavia, and sometimes, we encounter storms, typhoons, cyclones (all mean the same in different parts of the world), with waves that almost engulf the ship, battle with fire, deal with lack of potable water, engine breakdown, or grave medical emergency without medical assistance (no doctor is required on a ship with less than 100 passengers).

Mercantile Law as known today, evolved over the years, when the merchant marine brought back, along with trade, different business practices and terms from across borders. Business terms like General Average, concept of insurance, principles of mutual indemnity, planned maintenance, bill of lading, charter party, Sundays and Holidays accepted, force majeure, became the common accepted terms of general businesses all over the world, because ships which plied all the seas without discrimination, needed common terms that were understood and accepted all over, regardless of political or religious inclinations. Thoughts on progress, path breaking ideas of invention and discovery, socially relevant civil codes etc were exchanged as a result of ships and their crew touching foreign shores. Great importance was given to creation of pollution prevention measures, distillation of water at sea, incineration of ship board waste and for garbage disposal, disaster control and rendering help in calamities through radio communication resulting in the writing of the Morse code, which helped put out the

MAY DAY and SOS (... - - - ...) signals from the middle of the ocean.

With trade flourishing during the silk route days, sailors often came back with very interesting and amazing experiences of their voyages, and spoke about them in a coffee shop in the river port of London. The owner of the coffee shop, Mr. Llyod was so enthralled by these tales, that he made the seafarers write down their experiences in a register. Today, these are the Llyods registers of Shipping, with a wealth of information.

This information was instrumental in insurance businesses being set up, and they took his name as a mark of recognition. Today, Lloyds is a big name in the city of London, in fact the world over, for financing, Insurance and certifying ships for seaworthiness. Then again Member of Parliament of Her Majesty's government in the 1700 moved a bill to stop over loading of ships and till today most important design feature of ship construction. The limiting line is known as Plimsol mark and conspicuously marked on port (left) and starboard (right) side of ship. Next time we could read about interesting terms of ship evolved over time!

Before science helped map the seas, ships sailed mostly either in the Northerly or Southerly directions until they hit land. Then they turned around after either refilling supplies, discharging business if they found co-operative hosts, exchanging crew etc., or then discovering new land and people, braving it if they were hostile, happy if they were friendly. Celestial bodies and description of weather, currents, tides mentioned in the scriptures were the only guides of navigation. Newton for the first time forwarded the theory that the Latitude of the observer = altitude of the pole star. And, introduced the relationship of time, longitude and astronomical navigation on which is based today's GPS. In spite of all the strides that technology has made, IMO is not willing to allow ships to sail without tools like the magnetic compass, the sextant to pin position, the hand held depth finder line or the ship's speed determination line, which are not dependent on external power sources. They are uneasy about leaving the ship dependent only on electronic gadgets! The Navy still uses colored linen flags to denote letters of the English alphabet and numbers 0 to 9 for coded communication!

Merchant shipping and seafarers are also the inspiration behind some of the world's best known fiction and non-fiction novels, movies, imaginative descriptions of the silk and spice routes, stories of the gold rush, poetry and Ballads like *Casablanca* – from which came the phrase “women and children first”, tales of Capt. Morgan, and of course Officer's choice and Grand Mariner!

India has little choice but to increase its present shipping strength by at least five times by 2020 so that Indian shipping can play its due role in the national economy. It needs to enhance its fleet to carry its booming EXIM trade and enable and ensure the modal shift of movement of cargo and people from road and rail to water ways – the oldest and cheapest form of transportation, which will not only reduce inflation, but also unclog the over-crowded roads and railways and reduce pollution. Otherwise we are in grave danger of choking on our own congestion and CO2 emission. India has just taken a few tentative baby steps in the right direction by starting to indigenously build ships, but it needs to pull up its socks, because we are a big country with a huge coastline, and are not using God given natural resources to our advantage.

Sailing in a naval ship or a submarine underwater is a totally different ball game, and best left to today's first line of defense...the Indian Navy! Suffice it to say that the world over, everyone is looking for more trade than wars. Do join India and the Marine Community in celebrating the National Maritime Day on 5th April, when India's first “owned” ship, the SS *Loyalty* sailed from “Bombay” to London, 60 years ago.

CAPT. S. V. SUBHEDAR

- President of ICCSA a nodal body of Indian coastal ship owners operators
- Director Supath Engineering Services P. Ltd.
- Chairman Ramjanki Inter college trust, Kanpur
- ex Director (T) INSA
- ex Director of Ocean Sparkle group of companies Hyderabad, largest port and allied services company in India
- Technical officer of IMO and Dept. of Transport UK
- Superintendent in SCI Mumbai and Anglo Eastern Hong Kong
- Officer and sailing Master of SCI and Anglo Eastern Co.
- Ex Dufferin Cadet 1966-68
- Professional Qualifications Extra Master, B.Sc. marine Tech. London award with commendation 1976
- Member Royal Institute of Naval Architects
- Member International Ship Masters federation
- Member Company of Master Mariners of India
- Chartered Member Institute of Quality Assurance U/K
- Active Rotarian



Economic Development and National security: Some Conceptual Reflections

Dr Pradeep Apte

INTRODUCTION:

All nations, whether developed or undeveloped, have their own system of managing internal and external security (henceforth briefly referred as NS). Maintaining any such system has its economic costs and consequences. It may be useful to begin those economic considerations and concerns which are applicable to all nations irrespective of their level of prosperity and historical legacy. During last six and half decades there has been no major second world war-like episode experienced by developed nations of NATO (principally Europe USA). However the cold war with Soviet led bloc has imposed certain economic costs on them. Reciprocally, the Soviet bloc countries had to bear certain deeply influential economic consequences (including technological embargoes) of its post-world war arrangement within Soviet bloc. Let us therefore have a brief summary of economic view of any security system. Such economic mechanisms and effects apply to all nations generally (section I). Of course these apply equally to those nations which are hardly prosperous and many of them have just emerged on world scene only few decades ago. However, these countries perhaps confront these commonly shared problems with their own distinguishing twists and severity. We will deal with distinctions in the section II.

ISSN 2347-9191 print

© 2015 Centre for Advanced Strategic Studies

CASS Journal, Vol. 2, No. 2, April-June 2015, pp. 111-121

SECTION I

Relationship between economic development and national security is very complex and uneven. Over a period of time coverage and meaning of 'development' as well as 'national security' have been dynamically changing and elastically expanding. This expansive coverage of both makes the relationship even more complex to analyze. Economic transformations prompted and accelerated by industrial revolution have been all pervading and they have gradually changed several institutional patterns across all societies. This great transformation was facilitated and/or complemented with the rise of political freedoms and basic fundamental rights, emergence of modern notions or ideas of nations and nationality. (It may be reminded that in biblical sense nation simple meant 'tribe or race'!) Earlier institutional arrangements prevalent under traditional monarchic and feudal military apparatus were compelled to respond to these tumultuous changes. More importantly, advent of new technology altered the organizational pattern and resource needs of NS establishments. Yet political content of individual freedoms and rights were less fierce and articulate when compared with present political attitudes. The political clamor for democratic state notwithstanding, the supremacy of state in undertaking any action to defend the nation from any form of foreign aggression remained unassailable. Any injury to person of one's own 'nationality' in foreign territory or by the foreigner would have been considered as an adequate instigation for a battle; even a war! One major phase of this political military transformation was completed at the end of Second World War. However, the apparent nature of complementarity between military defense preparedness ('essentialist' core of euphemism called 'national security') and economic growth experienced during this period has left very lasting impression on models of economic development. There are some classic instances in modern history which have become iconic images of this interrelationship e.g. political consolidation of Germany which was initially inspired by economic nationalism of Freidrich List and his proposal for Zollveriens (customs union) or rapid industrial-military preparedness of Soviet Union within decade of 1928 to 1938 or emergence of complex multifaceted military industrial complex of USA in the course of second world war. All of these in turn became historical proven 'models' of

harvesting benefits of mutual complementarity between economic growth and national security.

In more conventional economic parlance following could be argued without loss of generality: National security provision need resources. These resources have an opportunity costs (i.e. the same resources could have been used elsewhere but being blocked by a given use). In other words, due one kind of use the other potential development benefits are implicitly forgone. Can the use of resources from NS purposes be considered 'rational' and 'optimal'? What is the value of NS if measured in terms of forgone alternative uses and benefits thereof? Secondly, national security related uses have 'backward' and 'forward' linkages. Hence, every rupee spent on the national security purposes triggers a series of stimulus which is some finite multiple of the original expenditure of rupee worth. How large is this linkage based impact? Is it significantly higher than other alternative uses? Do the security expenditures create facilities which create benefits beyond intended uses (for example infrastructures). Such benefits are called 'positive externality'. Moreover, large scale modern manufacturing enterprises for and of defense requirements with a relatively stable demand guaranteed by the government has certain degree of stability. Such stability in turn spills over to the linkage industries. In addition, the operation and existence of such defence linked enterprises influence organizational and social cultural milieu of the location of the industries. For several centuries across histories contribution defence establishments have contributed significantly to urbanization. Thus all such causes consequences and dilemmas are shared by the all the nations.

A brief overview of economic view development:

The cold war period since 1950 had some additional features. During this period former colonial arrangements were unshackled and replaced by independent national regimes of various ideological persuasions. The 'politically independent' regimes that emerged in all these former colonies had their own tacit as well as explicit alliances with either of the polar-centre powers of the Cold war era. Most of these hoped for a rapid transformation of their economies. Such aspirations to become economically developed nation on the one hand and gain a respectable

foothold in near regions as well as host of international institutions became a driving principle of their economic and geo-political strategy. These countries constitute extremely diverse and heterogeneous group though they are often clubbed together under various characteristics labels such as 'least developed countries' 'less developed countries' 'developing countries'. In economic terms they are similar in some of the important traits. Most of them have low per capita incomes. A very large proportion of the income and employment is derived natural resource based sectors such as agriculture, forestry, fishing mineral production and almost all of them are usually technologically backward (even primitive). Coverage and quality of infrastructure such as roads railways, air and shipping ports are abysmally deficient. Levels of literacy, access to modern education and health care, life expectancy are very low. More importantly they lacked necessary institutions and trained manpower necessary in provisioning of either health education services. Record of human rights and political freedoms had been and continues to be pathetic. Women on the average enjoy very inferior status and in the matters of access to health nutrition and education there exists explicit gender bias.

Many of them in the initial stages face 'vicious circle of poverty'. 'Vicious circle of Poverty means continuance of feedback loop between low productivity and low income. Briefly put, low incomes imply low rate of saving which can be used to build up more productive capacity through investing the savings. This in turn means low productivity hence low per capita income. Thus low productivity persists so does the poverty. In last six to seven decades Economics as a discipline has endeavored to devise pathways to break this vicious circle and allow these nations to jump start their economies. There has been variety of policy measures that have been proposed aimed at helping these nations to economically leap-frog to higher prosperity and productivity. The policy thinking that hoped to seek the solution to prevalent multidimensional deprivations through a combination of admittedly ill-developed markets of these countries and even more ill-equipped government policy apparatus. This body of thought is known as 'development economics'. It represents an amalgam of thoughtful work that endeavors and hopes to transform vicious circle of poverty into virtuous spiral of prosperity. Towards this end industrialization and modern liberal social norms as well as

institutions were considered as major 'instruments'. Development has been for a long time considered as path of economic growth with equity and appropriate institutional changes. Hence level of per capita income, sectoral composition of economy, rates of savings and investments were usually considered as relevant stylized fact meant for monitoring course of development.

However, since last two and half decades the qualitative and distributive concerns such as infant mortality, gender equality, access to minimum levels of basic education and health care are now considered 'essence' or core of development. Equal or at least egalitarian access to certain 'public' and 'merit' goods such as health education, safe drinking water and their assured availability of these through guaranteed mechanisms now occupy central theme of the development thinking. However the question of quantum of resources needed on sustained basis remains and the questions of surplus for accelerating investments and sustaining higher productive capacities continues to haunt actual policy making. In this sense earlier models of envisaging growth remain live and valid. There are some notable features of economic developmental transformation that have significant bearing on notions of internal and external security.

Development and internal security conflicts:

Development process implies a host of transitions and transformations. Many of these need massive quantity of resources and they are achievable over a long period of two to three decades. Developmental transformation challenges many extant institutions and establishments. Consequently these breed social tensions and dilemmas which can disrupt prevalent law and order. They could potentially be cascading and merging with external security threats. In other words, development process may breed such array of conflicts and tensions which may snowball and lead to crisis on social scale and may acquire external or cross border nature. Let us review broad categories of such issues briefly.

- Development needs reallocation of resources and new uses of existing resources hence it also entails redefinition of property rights and displacement of the incumbent right holders. This may happen voluntarily as well through public acquisitions or public takings. In such circumstances the losers resist with political vehemence.

- Economic growth and development never progress evenly across all economic strata of the society. Percolation and spread of the benefits of development are very uneven. Consequently development process tends to exacerbate extant inequality and social perception (including tolerance) of inequality.
- Absorption of various social segments (e.g. castes, communities, religious groups) is uneven as well. This may breed sense of discrimination, exclusion and may result in conflicts along social stratifications.
- Development usually accelerates the migration of all types and reinforces rapid urbanization. Urban communities and settlements have their own characteristic social milieu. Emergence of slums, migrant colonies and widespread unemployment among displace migrants provide another large pool of potential sources of conflict and crime which in turn pose new type of challenges to internal security.
- Illegal cross border trade and migration opportunities mentioned above have better milieu to thrive in large metropolitan centers and may easily transmit and transform external security concerns. In particular migration of workers from adjacent less developed external territories potentially breed such conflict very easily.

Development and Cross border economic engagement:

Let us now look at external aspects of security vis-a-vis degree of economic openness across borders. In economic sense any engagement driven by principle of comparative advantage is usually rational and beneficial. Hence nation's propensity to trade in goods and services as well as flows of saving investments, cross border acquisitions of assets and incurrence of liabilities has its own economic rationality. However in case of less developed countries most of the industries are either absent or vastly inferior in various ways. Hence the doctrine of selective protection for infant industries has been advocated. This was first articulated by Frederic List in case of German speaking territories which eventually led to emergence of Germany as political as well as economic nation under leadership of Bismarck. It was also an implicit favoring of domestic industries till they attained sufficient scale to match the competition from without.

In the context of less developed countries the question of generating re-investible surplus earned through trade has been more extensively

debated. Degree of openness to trade and role of foreign investments together with prospects of generating investible surplus through foreign trade has been a very sharply contested issue. Singer and Prebisch (1946) led the school of thought that argued in favor of import substitution as the only path for industrial growth. Their argument was that most of the less developed or economically lagging countries were producers of primary products. In their assessment export earnings from these products would be stagnant as the prices of such products were on a relative decline where as prices of manufactured industrial products were appreciating at a faster rate. As a consequence export surpluses would be generally very insufficient to finance increasing quantity of industrial products (including defence equipment). In economic development having closing borders is often neither viable nor desirable. Even the countries which explicitly pursued import substitution policies could never entirely close themselves to foreign trade.

For the countries which had very thin basis and dim prospects of import substitution based growth in manufacturing this was a formidable problem. At least for certain intervals of economic growth this implied a severe scarcity of foreign exchange resources for all purpose. In other words the foreign exchange resources needed for national security purposes must compete and for them in the policy making process. If the import dependence of national security institutions (i.e. all forces under ministry of defence including research establishments devoted for these purposes) is very high there would be allocative conflict and competition between national security and other economic uses of foreign exchange. Maintenance and replacement and up-gradation of the equipment and technology in national security establishments would have to squarely face the resultant resource crunch.

Over the years, the role of commodity trade in generating needed supply of foreign exchange has significantly diminished. Capital inflows in form of foreign institutional investors who invest in financial markets in India, foreign direct investments whereby non-resident (economic and legal euphemism for foreign) entities and external commercial borrowing by the 'Resident' together with non-resident savings held in India are more buoyant sources of foregone exchange availability. Moreover participation of foreign capital across borders alters the negotiating postures between political establishment of recipient and

investing nations. Except for the extreme eventualities, which may result in freezing of the foreign assets such investment based interdependence acts as a moderating consideration. Reverse mechanism may also be operative. Due to legacy of the past national security arrangements some of the economic decisions may also be influenced by the continued dependence of supply of spares as well as service maintenance and guarantee of performance contract.

In this context, the national security related industrial activity (as an economic activity per se) assumes special importance in the context of subset of erstwhile 'developing' nations. Consider the case of China and India. Both of these were poised for further leap in industrial transformation in the 80's itself. In last three decades both have emerged as future growth engines of the world economy. Given the combined impact of increased open capital inflows across borders, altered geopolitical context and military co-operations and reduced incidence of technological embargoes of the cold war era both of these can reap substantial economic expansion of the national security related industries. Global markets of several technological products would provide further impulse to backward and forward industrial linkages and usher in the era of different set of industries (e.g. aerospace and aerospace parts and spares, non-conventional energy) that herald very different prospects than hitherto experienced.

However the question of demand for foreign exchange resources by national security agencies vis-a-vis demand by other users (i.e. non-defence users) remains a potential source of tension. Generally, most countries do not publish data on their 'defence related imports and all other related spending of foreign exchange resources. In India 'national security' related use of foreign exchange resources is roughly (even crudely) approximated as difference between DGCIS data on commodity imports and RBI data on the same. Similar questions of resource availability and allocative priorities between national security and other development goals exist in budgetary allocations made by the government. Some development economists have often argued that allocations to 'defence uses' retard development and are counterproductive.

Cross border interaction with the rest of the world is not confined to the legal activities mentioned above. Over the years the nature of forbidden and criminal activities have become significantly more globalized and

underworld crime drug trafficking, illegal movement of goods as well as persons have become another significant aspect of managing both internal as well external security. (e.g. Afghanistan, Some of the Latin American countries). Only few of these commodities of ill-legal imports can be influenced through usual instruments of policy such as tariff. In case of prohibited articles the illegal import thrives depending on the risk behavior of the consumers and their friendly intimate traders. Such trade often opens up the commercial channel for importation of machinery and weapons that pose threat to internal as well as external security.

Would it possible to empirically test and verify the interactive influences discussed above? Given such multifaceted interrelationship between development and national security can we uniquely characterize the economic value less developed countries attach to national security? Firstly history matters!! Most of the countries had historically inherited system of defense against foreign aggression. In some cases it was large and elaborate (e.g. India, China) where as in many other cases it was nominal or meagre. Thus the question of aligning inherited legacy of 'defense' was duly modified within the limits of political viability and economic resource availability. The heterogeneity in size as well as quality of national security systems among these countries is enormous. This heterogeneity emerges from various sources such as sizes of population, size and nature of terrain or land mass, specific local geo-political conditions, political ideologies of 'national security regimes', historically inherited affinities or rivalries etc.. Anyone familiar with the nature of disparate variability would never venture to produce quantitative estimates and hypotheses testing in these matters. At best only broad trends are claimed. In most of the developing countries the share of defense expenditures remained stable and marginally increased.

Generally capital expenditures on national security have increased more rapidly than current or revenue expenditures. This is reflective of increasing capital labor ratio of security producing sectors. It is also perhaps another example of increased capital availability of capital within developing countries. Generally, the wages and salaries of the personnel in security supplying industries keep pace with inflation and salary structure of government employees. This of course reflects the nature of institutional rules followed by government of the countries rather than

underlying market conditions per se. The preference for joining security national services varies according to rank and strata where the recruitment is warranted but persons with higher educational qualifications do not show any marked preference for employment in national security services. Any meaningful empirical generalization should therefore be plausible by sifting through the data and careful stratification of these countries into comparable groups. Available empirical studies based on the data available in public domain do not suggest any robust and definitive relationship. This is because the underlying mechanisms are too multifarious and data available needs to be very carefully re-classified to capture meaningful groupings. Thus it would be interesting to have more disaggregated data by size and geo-political conditions.

DR PRADEEP APTE



Dr Pradeep Apte is Visiting Faculty member of Gokhale Institute of Politics and Economics, Pune. He is an eminent economist and his expertise is in Operations Research, Econometrics, International Trade and Finance, Public Economics and Taxation as well as Agricultural Economics. He has been on the faculty of Fergusson College, University of Pune and the Gokhale Institute of Politics and Economics.

Dr Apte is also associated with ICICI Training Institute, Institute of Management Development and Research Symbiosis Institute of Business Management, World Trade Centre' Institute of International Trade YASHADA.

He has been a Member Advisory Committee on Water Resources Planning Commission (2014), Member Memorandum Committee of Govt. of Maharashtra for 14th Finance Commission Govt. of India(2014), Member Expert Group on State Finance Commissions : 13th Finance Commission Govt. of India(2009), Member, Third State Finance commission, Govt. of Maharashtra, India(2006). He has also been a Consultant to the World Bank , World Trade Centre, India and has been Member, WTO working group of Govt. of Maharashtra as well as Chairman Advisory and Consultants Committee, Maharashtra State Agricultural Marketing Board. (MSAMB) (1992-94). He is SEBI Nominee director of Pune Stock Exchange, Public Nominee Director Pune Stock Exchange and Advisor for Municipal Finance Planning and evaluation, for CRISIL.

Dr Apte has been awarded Pandurangi Memorial Prize for Best M.Phil. dissertation awarded by Gokhale Institute of Politics and Economics. He has been Associate editor of 'Arthsamvada' Journal of Marathi Arthvidgnyan Parishad (1985-1988) and Founder and honorary member of Ashay Film club, Pune India. Scripted and produced documentaries on Music and agriculture. He also has a large number of research works and publicaions to his credit.

Anatomy of Make-in-India in the defence sector

Amit Cowshish

In recent times, nothing has caught the imagination of the country more than the 'Make-in-India' initiative of the government that aims at transforming India into a manufacturing hub.

It is important because the demographic challenge requires India to create millions of additional jobs every year. With agriculture providing little scope for job creation and the services sector already at a saturation level, it is the manufacturing sector that holds promise for the future.

According to a McKinsey report, India's manufacturing sector has the potential to reach up to 30 per cent of the country's GDP, contributing around US\$ 1 trillion and creating close to 90 million jobs by 2025. No wonder, then, that as many as 25 sectors have been identified by the government, ranging from automobiles to wellness, under its 'Make-in-India' initiative.

Defence manufacturing, which is one of the twenty five sectors identified by the government, has a vast potential for growth. India is presently the largest importer of defence equipment, sourcing anywhere between 60 to 70 per cent of its procurement from the foreign companies, but desperate to reverse this ratio. That cannot be achieved without expanding and strengthening the defence industrial base in India.

The list of items presently being imported makes for an embarrassing reading. It even includes some special clothing items for use in extreme cold climate, unmanned aerial vehicles and even some of the ammunition

for the weapon systems we have. There is no reason why most of these items cannot be manufactured in India without much fuss.

For nearly half a century after gaining independence India relied – and continues to rely – largely on the network of ordnance factories (OFs) under the umbrella of the ordnance factories board (OFB) and the defence public sector undertakings (DPSUs) to meet the requirement of the armed forces in tandem with import of equipment from abroad, notably the erstwhile USSR. Some of the equipment is also manufactured in India but it is largely by using the technology transferred by the original equipment manufacturers under technology transfer agreements. It will be uncharitable to belittle the contribution of the OFB and the DPSUs but what they have been doing so far has clearly not been good enough to make India stand on its feet. This is also true of the defence research and development organization (DRDO).

The post-Kargil introspection by the defence establishment, epitomised by the report of the Group of Ministers on reforming the national security system, resulted in new defence procurement management structures and systems being instituted, opening of the sector to the private industry and foreign direct investment (FDI) being allowed up to a modest 26 per cent in the first two years of the millennium.

These steps helped in streamlining the acquisition process to some extent but did little to promote indigenous design, development and manufacture of defence equipment. Between 2002-03 and 2013-14, as much as ₹4.25 thousand crore was spent on capital acquisition but there was no significant change in the proportion of import of defence equipment in relation to the total purchase.

The foreign investor has also largely stayed away, bringing in a paltry ₹24.36 crore between the time the sector was opened to FDI and December 2014. The amount is so insignificant that it does not constitute even 0.01 per cent of the total FDI in India from April 2000 to December 2014 for which the data is available on the Department of Industrial Policy and Promotion (DIPP) website. At ₹22.05 crore, only the coir sector has received lesser FDI than the defence sector. Interestingly, sixty odd sectors have received higher FDI than the defence sector – one of them being glue and gelatine sector!

In a written reply to the question asked by a member of the Rajya Sabha, the Minister of State for Defence disclosed on March 10, 2015

that since August 2014, FDI proposals received from Foreign Investment Promotion Board (FIPB) after August 2014 add up to ₹96.10 crore.

This is good but only time will tell what impact it will have on boosting defence manufacturing in India.

The recent spurt in FDI proposals notwithstanding, it cannot be denied that something has obviously gone wrong somewhere. Whatever be the problems, these need to be identified and fixed - and fixed very fast as the time is running out. Which is where 'Make-in-India' fits in. Or, does it?

COME, MAKE IN INDIA

Delivering his maiden Independence Day speech on August 15, 2014, the prime minister exhorted the foreign companies to 'come, make in India' products ranging from cars to satellites. This was undoubtedly intended to revive the manufacturing sector which had been slowing down for quite some time, bringing down the economic growth to below 5 per cent for the second year running in 2013-14. It was also an acknowledgement of the potential of the manufacturing sector to generate employment, save foreign exchange, narrow down current account deficit, and give a leg up to the Indian economy, thereby boosting India's image in the comity of nations.

STEPS TAKEN BY THE GOVERNMENT

Immediately after assuming power at the Centre in May 2014 with a single-party majority, unprecedented in the preceding three decades, the NDA government wasted no time in taking some steps focussed on the defence industry in India.

- A remarkably simple list of defence items that can be manufactured only after obtaining an industrial license was notified within a month of the new government being sworn in. The government notification also clarified that henceforth dual use items, which have a military as well as a civil application, other than those mentioned in the notified list, would not require an industrial license.

- In July 2014, a 'Security Manual for Licensed Defence Industry' was released by the Department of Defence Production to remove any ambiguity regarding security and auditing procedures to be put in place by the licensed units.
- The same month, in a move to make life easier for the defence industry, DIPP increased the initial validity of the industrial license from two to three years.
- In August 2014, FDI cap was increased to 49 per cent under the government route with the stipulation that beyond that limit FDI will be allowed on a case-to-case basis by the Cabinet Committee on Security wherever it is likely to result in access to modern and state-of-the-art technology.
- The new FDI policy permits investments by foreign portfolio investors (FIIs), through portfolio investment, up to 24 per cent under the automatic route.
- The requirement of single largest Indian ownership of 51 per cent of equity was removed and the lock-in period of 3 years on equity transfer was done-away with for FDI in defence.
- In September 2014, the Department of Defence Production put together a Defence Export Strategy.

These steps are important in their own right but have been overshadowed by the work that is still in progress on many other policy and procedural issues.

WORK-IN-PROGRESS

Since manufacturing forms the core of the 'Make-in-India' initiative it was reasonable to expect the government to come up with a policy framework that promotes it in the defence production sector. This was necessary broadly for two reasons. One, because 'Make-in-India' in defence is a different cup of tea than 'Make-in-India' in most other sectors for a variety of reasons, the monopsonic nature of the defence sector being one of them. Two, because the existing policy framework in defence has not yielded the desired results despite all the efforts made so far.

A plausible explanation of why it has not happened is that the government considers the existing policy framework to be adequate.

The only policy on defence manufacturing per se presently in place

is the Defence Production Policy. Promulgated in January 2011 by the Ministry of Defence (MoD), it pre-dates the current 'Make-in-India' initiative. It was, nevertheless, aimed at promoting 'substantive self reliance in defence in design, development and production of equipment/ weapon systems/platforms required for defence in as early a time frame as possible'.

Thus, there is indeed a convergence between the objectives of the 2011 policy and the present 'Make-in-India' thrust by the government. But this would also imply that the present 'Make-in-India' initiative cannot show results unless the 2011 policy makes it possible. Seen in this perspective, it is important to consider what impact the 2011 policy has had so far and whether this policy is adequate for achieving the objectives of the current initiative of the government.

The answer to the first question does not seem very encouraging. Had that policy got going, the last four years would have seen substantial ground being covered by the Indian industry in moving towards self-reliance or, at least, setting the stage for a quantum leap. However, that has not happened as India continues to be the largest importer of the defence equipment. In the circumstances, it would have been prudent to revisit the existing policy framework.

Annual review of the progress made in achieving self-reliance, as envisaged by the 2011 policy, would have revealed what is holding back the industry and what needs to be done but no such review appears to have been carried out even in the recent months to align it with the objectives of 'Make-in-India'.

Be that as it may generally speaking, the problems with the existing policy framework are well known.

To begin with, the least that the industry requires is advance information about what the services would need, as also the volumes, so that it could gear up itself for manufacturing the equipment required by them. In April 2013, a Technology Perspective and Capability Roadmap (TPCR) was released by MoD to 'provide useful guidance to the Indian Defence Industry for booting its infrastructural capabilities and directing its R&D and technology investments'. Though it soon became obvious that TPCR does not meet the expectation of the industry and will not boost production, TPCR 2.0 is still awaited.

This is also true of the procedures. The Defence Procurement

Procedure (DPP) 2013 has been under review for more than a year. The procedure for 'Make' projects, which forms a part of the DPP, has also been separately under review. The offset guidelines of August 2012, which were later incorporated in DPP 2013, have been under review for more than two years. The Defence Procurement Manual 2009, which regulates procurement of stores and services of various descriptions, including ordnance stores and ammunition, from the revenue budget, has been under review for close to three years.

There are other larger issues that have remained unattended and promises that have remained unfulfilled. One of the problems being faced by the defence industry is related to taxation and incentives. A press release of 2013 said that issues concerning deemed export status for certain defence projects and rationalization of tax and duty structures impinging on the Indian defence industry had been taken up by MoD with the Ministry of Finance (MoF). Two years later, these issues still remained unresolved.

The Defence Production Policy of 2011 promised setting up of a fund to provide necessary resources for development of defence equipment. The April 2013 press release declared that in order to ensure regular supply of funds to Micro, Small and Medium Enterprises (MSMEs) involved in manufacturing of defence products, Small Industries Development Bank of India (SIDBI) had decided to earmark an amount of ₹500 crore for providing loans and create a fund of ₹50 crore for equity support out of "India Opportunities Fund" managed by its subsidiary, namely, SIDBI Venture Capital Ltd.

Nothing happened on this front for more than a year. so much so that while presenting his first budget on July 10, 2014, the finance minister had to tell the parliament: "in the year 2011 a separate fund was announced to provide necessary resources to public and private sector companies, including SMEs (Small and Micro Enterprises), as well as academic and scientific institutions to support research and development of Defence systems that enhance cutting-edge technology capability in the country. However, beyond the announcement, no action was taken. Therefore, I propose to set aside an initial sum of Rs 100 crore to set up a Technology Development Fund". A document circulated along with the budget speech of February 28, 2015 shows that this work is still in progress.

Some of the recent developments show that the tendency of

procrastination continues. In December 2014, the defence minister had told the journalists that changes will be made in the DPP in another month and a half to regularise representatives of the foreign defence firms. That has not happened. It has been twenty five years since the policy on this vital issue, which has derailed many an important procurement programme in the past, was first promulgated but it is yet to be brought in sync with the present day realities.

It is becoming increasingly clear from all this that the objectives of 'Make-in-India' cannot be achieved within the framework of policies and procedures that were promulgated before this drive was launched by the present government and which, by MoD's own admission, is under review, primarily because the existing framework has not produced the desired result. The lion made of cogs, which is what the logo of 'Make in India' is all about, cannot ride old horses.

'MAKE-IN-INDIA' IN DEFENCE AND THE 'MAKE' PROCEDURE

It is difficult to make out from the 'Make-in-India' website in what respect the new initiative is different from the 'Make' procedure that forms a part of the DPP. Introduced in 2006, the 'Make' procedure was expected to catapult Indian industry into the big league of defence majors, capable of making futuristic equipment and weapon systems.

The 'Make' projects, open only to the Indian companies, involve indigenous research, design, development and production of high technology complex systems or critical components/equipment for any weapon system so developed. These projects entail government funding to the extent of 80 per cent till the prototype development stage and assured order for a minimum quantity fixed in advance thereafter. Sadly, eight years after the procedure was introduced, MoD has nothing much to show by way of results.

'Make' procedure was not the only one expected to revolutionise defence production in India. In all, there are five modes of procurement - Buy (Indian), Buy and Make (Indian), Make (Indian), Buy and Make, and Buy (Global). These were arranged in a hierarchical order of preference in 2013 to promote domestic production as each one of them, possibly barring the last one, involves manufacturing in India to varying extent.

The equipment purchased from the Indian companies under 'Buy (Indian)' must have at least 30 per cent indigenous content. This is not possible unless some part of the manufacturing or system integration is done within the country. In 'Buy and Make (Indian)' cases also the first equipment made/assembled in India must have a minimum of 30 per cent indigenous content, to be gradually increased to 50 per cent by the end of the programme.

Even in 'Buy and Make' cases, the selected foreign vendor supplies the quantity covered by the 'buy' portion of the contract in a fully formed state but the balance quantity is required to be license-manufactured/integrated in India by the Indian agency nominated by MoD.

'Buy (Global)', which is the least favoured category, implies outright purchase of the entire requisite quantity from a foreign vendor but interestingly the RFP is issued in such cases to foreign as well as the Indian vendors and the contract is awarded to the lowest bidder. So, even in 'Buy (Global)' cases, there is an incentive for the Indian companies capable of manufacturing the equipment in India to compete.

By introducing these categories, MoD had created an opportunity for manufacture of defence equipment by the Indian industry entirely on its own or in collaboration with the foreign companies. Ironically, however, the decade-long efforts have only resulted in India emerging as the largest importer of the defence equipment.

There is little evidence that the present 'Make-in-India' initiative is an attempt to set right whatever has gone wrong with the existing system of categorization but one thing is clear: 'Make-in-India' in defence cannot be fitted into the generic concept of 'Make-in-India', which is more of an invitation to the foreign companies to set up manufacturing units in India. That runs against the grain of the stated policy of the government to promote indigenous defence industry and to achieve substantive self-reliance in defence production.

In so far as the defence sector is concerned, 'Make in India' cannot mean a no-holds barred invitation to the foreign companies or an exclusive appeal to the Indian companies. It will have to be a combination of efforts by both if India has to become a manufacturing hub. But that is precisely what the existing procurement policy has aimed at all along without achieving much success in converting India into a manufacturing hub, which brings us to square one. So, where does one go from here?

CUSTOMIZING 'MAKE-IN-INDIA' FOR THE DEFENCE SECTOR

Making India a manufacturing hub in the defence sector would require much more than the minimalist and disjointed steps taken so far. Steps such as increasing the FDI limit or notifying the list of defence products which can be manufactured only after obtaining an industrial license do not amount to re-orientation of the policy which is what was expected when the 'Make-in-India' campaign was launched.

MoD will have to work on four tracks simultaneously if it wants to reboot defence production under the 'Make-in-India' prescript. First, an overarching policy framework will need to be evolved to harmonize the efforts of multiple players and stakeholders. Second, an eco-system will need to be created for the industry to realize its potential. Three, suitable organizational structures will need to be created to implement the policy. And, four, systems and procedures will have to be reviewed to ensure that they are in sync with the objectives of the policy.

POLICY FRAMEWORK

The objectives of the Defence Production Policy of January 2011, which is the only policy framework in place, remain unrealized as evident from the fact that there has been no perceptible increase in indigenous manufacture of defence products. This is largely because of lackadaisical implementation of the policy, be it in regard to simplification of the 'Make' procedure, setting up of a separate fund for providing necessary financial resources to the industry, promulgation of policies to encourage public and private sector 'to strengthen their research and development wings so that constant up-gradation and improvement in systems under manufacture is possible', etc. But it could also be on account of some fundamental flaws in the policy.

For example, the policy requires the Service Headquarters to exercise due diligence while formulating the Qualitative Requirements (QRs) without explaining how was this to be ensured. Consequently, it is not surprising that as many as 41 Request for Proposal (RFPs) of the Indian Army fell through over a period of 18 months ending March 2012 because of the QR-related problems, as reported by the Standing Committee on Defence.

The 'Make-in-India' campaign has stimulated the foreign governments and companies without there being any clarity as to how are they expected to enter the Indian defence market, especially in the face of the policy of giving preference to 'Buy (Indian)', 'Buy and Make (Indian)', 'Make (Indian)' over 'Buy and Make' and 'Buy (Global)'. This contradiction in the policy is quite confounding.

There is clearly a need to formulate a policy that defines the government's objectives, the role it expects to be played by the foreign and the Indian defence industry (including the MSMEs), an industry-friendly legal framework within which the industry could operate, and the concessions/incentives to be extended to the industry. In the process, the role of the DPSUs, OFs, MSMEs and, not to forget, the DRDO, may need to be redefined. There is also a need to lay down the modality of government-to-government agreements on transfer of technology, as well as co-production and co-development of defence equipment.

ECO-SYSTEM

India figures at 142nd position in the global index of ease of doing business. Except for protection of minority investors, on all other parameters that constitute the index, India figures way down the order. These parameters include ease of starting a business, dealing with construction permits, getting electricity, registering property, getting credit, paying taxes, trading across borders, enforcing contracts and resolving insolvency. These things affect the Indian industry as much as the foreign companies

The Indian industry has its own list of woes related to industrial licensing (somewhat eased now), acquisition of land, taxation, incentives, FDI and exports, to name a few. The MSMEs, which will need to play a critical role in strengthening the industrial base, are struggling even to cope with the cost of capital.

These problems are compounded by unresponsiveness and inaccessibility of the officials who are in a position to redress the problems faced by the industry and the interminable process of decision-making. Needless to say, the industry will continue to flounder unless these concerns are addressed holistically and simultaneously. In fact, resolution of these issues is a sine qua non for the industry to take on

the responsibility of partnering with the government in India's quest for greater indigenous production of defence equipment.

PROCEDURAL FRAMEWORK

While almost one-third of the defence budget is spent on procurement of equipment and other stores in accordance with the procedure laid down in the DPP and the Defence Procurement Manual (DPM), DRDO, OFB and the DPSUs follow their own procedures and practices, causing confusion in the process.

Despite several revisions, the DPP is widely seen as obstructive and the procedure envisaged therein as needlessly cumbersome. On the other hand, DPM has not been reviewed for more than five years. There is no intrinsic merit in frequent revision of the procedures but if 'Make-in-India' initiative of the government entails a shift from the status quo, surely the old procedures will not serve the purpose.

Very few foreign companies will be inclined to set up manufacturing units in India unless there is some assurance of the product they make being bought by MoD which, in most of the cases, would be the only possible buyer. This cannot be done within the ambit of the existing policies and procedures.

The US government has offered to share a number of technologies with India. Other countries are bound to follow suit. But such offers cannot also be processed within the ambit of the existing policies and procedures.

The existing procedures only provide for MoD to reach out to the prospective sellers/manufacturers to procure/manufacture what it needs for the armed forces. There is no prescribed procedure according to which the sellers/ manufacturers who have a product to sell or a foreign government which wants to enter into co-production and co-development arrangements with India could do so as a matter of routine.

The example of BrahMos Aerospace, a joint venture between DRDO and the Russian Joint Stock company NPO Mashinostroyeniya, set up under an inter-governmental agreement signed in 1989 for designing, developing, making and marketing BrahMos supersonic cruise missiles, could be replicated if a transparent and generic policy is build around this model to stimulate foreign governments and companies.

STRUCTURES

There are a number of official agencies and committees, both in the MoD and the Services Headquarters (SHQs), presently involved in steering defence production and procurement. There is a Defence Acquisition Council (DAC) and a Defence Procurement Board (DPB). There are Defence Minister's (Production and Supply) Committee and the Defence Research and Development Council.

The capital acquisitions are steered by the Services Capital Acquisition Plan Categorization Committee (SCAPCC) and the Services Capital Acquisition Plan Categorization Higher Committee (SCAPCHC), both of which are a part of the Headquarters Integrated Defence Staff.

There is a Defence Minister's Committee with two sub-committees under it: Principal Personnel Officers' Committee and the Principal

Supply Officers Committee. There is a Defence Information Technology Coordination Committee (DITCC) under the Minister of State. The Qualitative Requirements (QRs) that determine to a large extent the fate of an acquisition programme are finalised by Service-specific Equipment Policy Committees (SEPCs).

All these structures play some role or the other under the existing system but if – and that seems like a big if at this juncture – a new comprehensive policy aligned with the 'Make-in-India' idea of the government is evolved by the government, it will be necessary to consider whether the existing structures will be able to ensure implementation of that policy.

There are several problems with the existing structures. One, these are totally disjointed and follow separate chain of control and command making coordination of efforts a virtually impossible task. There must, therefore, be an apex structure to ensure coordination and synergy.

Two, reliance on generalist civilian bureaucracy and largely disaffected military bureaucracy may not be the best way to handle the new challenges that 'Make-in-India' in defence has thrown up. There is a need to have permanent professional bodies to handle matters such as formulation of QRs, tendering, monitoring of offset contracts, et al. Alternatives, such as creating an overarching agency that is not embedded in MoD, could also be considered.

Three, MoD does not, as a matter of course, obtain inputs from

the think tanks, most of which are repositories of years of cumulative experience of the civilian and service officers, who know the system inside out having been a part of it while they were in service. This is in sharp contrast to what happens in countries like the US and UK. Making use of the think tanks will go a long way in ensuring that the wheels are not re-invented, mistakes of the past are not repeated and, most importantly, the good initiatives taken in the past do not run aground.

This will supplement the efforts that MoD has been making of late to consult the industry associations but care must be taken to keep all stakeholders on board while taking final decisions on policies and procedures to ensure their cooperation.

Four, though there has been some change in the atmospherics, unresponsiveness and inaccessibility of the MoD officials, as also of the military bureaucracy possibly to a lesser degree, continues to be a problem for the industry. This is largely on account of the risk involved in being seen to be 'hobnobbing' with the 'contractors'. The pace and quality of decision making has to improve and a mechanism needs to be created for not just grievance redressal but also for providing guidance to those outside the system who have to deal with MoD.

The solution has to be institutional rather than being dependent on individual initiative and temperament of the officials. The answer lies in collective decision-making; creating a forum for interaction with anyone who has a grievance, needs guidance or requires clarifications; and, institutionalising a system of regular interaction and feedback from all stakeholders.

BOTTOM LINE

These are random ideas about what needs to be done. A focussed and sustained effort is required to walk the talk on 'Make-in-India' in defence. Quintessentially, what is required is a comprehensive policy that convinces the industry that there is a real business case to enter the defence production sector in India, provides clarity on how to enter this sector, and states upfront what can be expected of the government. Everything else will fall in line once there is clarity on policy. It is not a day too early to focus on this issue as the time runs out faster than one normally cares to acknowledge.

AMIT COWSHISH



Amit Cowshish is a former Financial Advisor (Acquisition) & Additional Secretary, Ministry of Defence. He has been associated with defence planning, budget, revenue and capital procurements, and other matters concerning financial management in defence. He retired as Additional Controller General of Defence Accounts. He is presently a Distinguished Fellow with the Institute for Defence Studies and Analysis, New Delhi and a Partner with Dua Associates, Advocates and Solicitors.

Indian Defence Economy and National Security: Nuances, Challenges and Opportunities for the Defence Industry

Air Marshal M Matheswaran AVSM VM PhD (Retd)

Prime Minister Narendra Modi and his government have generated huge expectations of a major transformation in the area of defence industry. The “Make in India” slogan of the new government has announced it as a national program, designed to facilitate investment, foster innovation, enhance skill development and aims to build best-in-class manufacturing infrastructure. The first few steps; hike in FDI to 49% in defence sector, urgency that is displayed in institutionalising the defence acquisition mechanism and focus on Buy and Make categorisation of large acquisitions, pressure on DRDO to dismantle its bureaucratic structures and bring about accountability and focus on young scientists, support to private sector in defence, and bringing in scrutiny and accountability in Defence Public Sector Units (DPSU); have given the impression and hope that the government may display the necessary resolve to bring in radical reforms. These expectations revolve around much needed reforms to energise defence manufacturing, defence R & D, and defence exports. For too long Indian defence industry has been hampered by government’s skewed policies and a licence raj. While considerable lip service has been paid to the need for indigenisation, action on ground has been piecemeal and ineffective. For more than half a century India’s defence industrial policy has been governed by inward looking approach to defence production, lack of involvement of private sector, and an inefficient public sector focused on licence production. As a result Indian

ISSN 2347-9191 print

© 2015 Centre for Advanced Strategic Studies

CASS Journal, Vol. 2, No. 2, April-June 2015, pp. 137-157

military continues to be import dependent for its critical equipment to the extent of 70 to 80%. India has also earned the ignominious reputation of being the largest importer of military equipment in the world.

TECHNOLOGY AND NATIONAL SECURITY

Military capability is a critical element of national security. Military capability is directly proportional to the force structure, size, and the quality and effectiveness of its war fighting capability. It depends on the country's resources in terms of affordability and access. The level and the nature of technology of the equipment determine the military's effectiveness through its doctrine, tactics, and strategy. Technology then becomes a core area that impacts on national power and through it on national security. Today we live in the post-industrial age where technology, as the critical resource, becomes a fundamental building block of national power. National power addresses national security in two distinct but related dimensions of capacity: "an external dimension that impacts on global environment its economic, political, and military potential, and an internal dimension, which consists of a nation's capacity to transform the resources of its society into actionable knowledge that produces the best civilian and military technologies possible". Technology, along with enterprise, human resources, financial capital and physical resources combine to become critical national power resources to develop modes of production that enable the country to dominate the cycles of innovation in the global economy and achieve effective power and leverage through the creation of highly sophisticated military forces which would be capable of meeting diverse threats through the execution of demanding operations.

The importance of technology and consequently, the defence economy can only be appreciated if the changed nuances of India's role and stature in the global system are recognised. India, in the 21st century, has clearly moved upwards into the ranks of major powers in the hierarchy of nations on the strength of the size of its economy, its potential, population, and resources. If its potential has to be realised then India will need to grasp the nuances of the role of technology and its defence industry in its national power. India has an unenviable task of overcoming its lag in its defence industrial capability while simultaneously achieve the task of

leapfrogging into the knowledge sector. These are enormous challenges particularly in an environment of intensely competitive politics amongst nations.

Politics amongst great powers is very dynamic. Advances in science and technology have long influenced the course of international politics. Technology, in fact, is one of the key determinants in shaping relations among nations, alongside wars and economic shifts. Technology is a key tool for economic development and national security. Technology determines the kind of resources that are necessary, and hence, leads to competition for resources. Great power contests are essentially struggles for resources. As globalisation increases the interconnectedness of the world, technology and resources revolve around energy, information, and military power. Quite naturally, most wars of the late 20th century have been energy wars (wars for domination of the energy-rich region or direct contest for access to energy). Technology for rising powers such as India and China is central to any analysis of their resource base and development. For example, China is employing modern transportation technology to re-draw the map of Eurasia via high-speed railways, highways and pipelines. Beijing is spending billions to create its alternate hub and spokes economic system whereby the various pipelines, railroads and highway transportation networks linking China with central, south-west and south-east Asia will serve as the spokes or arteries that will bring new materials and energy resources.

Technological imperative has major impact on the foreign policies of major economies. Thus quest for resource technology is providing a new thrust to China, USA, Russia and India's diplomacy. While pursuing a mercantilist foreign policy over oil, gas, and minerals, China is also investing heavily in green energy technologies that could help it to leapfrog over other major economies in the future. It could be a technological surprise that has the potential to usher in a new world order.

TECHNOLOGY AND THE INTERNATIONAL ORDER

Hierarchy of nations in the international order is determined by the extent of power and influence wielded by them. While the power is comprised of economic, political, and military power components, the

role of technology in these components is critical. In short, a country's place in the global hierarchy is determined significantly by its science and technology capabilities. Modern technology plays a central role in a nation's, big or small, pursuit of national goals. Early adoption of new technologies bestows advantages on new comers. For big countries like India and China, which missed the industrial revolution, access to technology is as important as their research and innovation effort. The two efforts need to be combined intelligently by evolving an effective technology strategy, both for the short-term and the long-term, so as to leapfrog in technology development. In a globalised world, technology access and technology denial play key roles in determining the fate of nations. Nations compete either by raising themselves to higher levels of techno-economic performance or by keeping others down, technologically and economically. Superior technology is the key to ensuring military capability is ahead of that of enemies and competitors. Technological advances can upset the existing power balances and shape military capabilities for future conflicts.

There is intense debate underway about the need for technological solutions to deal with the use of Space, Cyber, Maritime and Environment domains to treat them as "Global Commons". But the Chinese view it from their national security angle and hence, do not subscribe to the "Global Commons" perspective. They call these four domains as China's "strategic frontiers" where Beijing must have technological edge over others. This could lead to different groups and alliances. Looking at the various technology control regimes such as MTCR, NSG etc, it is evident that geopolitical alliances are as much about technology as about shared interests and values. The economic and security dimensions of technology play critical roles in the effectiveness of the defence industry of a nation. If India is to play an effective role in the international system, it needs to strategise its industrial policies after scrutinizing its technological capabilities at three levels.

The first level is an estimate of the country's capacity to produce the most important critical technologies today. It is now well established that the most important technology today appears to be information and communication technologies in all its manifestations. The second level is the country's capacity to produce the most important critical technologies of tomorrow. These lie in the areas of materials,

manufacturing, biotechnology, aeronautics and surface transportation, and energy and environment. The third level is the country's capacity to produce the most important militarily critical technologies of today and which would continue to be critical into the near future. National Security strategy will have to factor the nuances of these three levels in order to develop a successful defence industrial eco-system.

TECHNOLOGY GROWTH AND INDUSTRIAL GROWTH – ANALYSIS AND LESSONS FOR INDIA

For India's new vigour of "Make in India" to succeed it would do well to learn the right lessons from the successes and failures of other major economies and industrial leaders. Schumpeterian model of cyclical economic growth and development is based on technological innovation, knowledge and human capital. Joseph Schumpeter adopted Russian economist Kondratieff's view of the world economy going through successive waves of industrial revolutions of empirically 50-60 years each. Technology and industry are required to be coupled in a positive growth model in order to ensure growth of the national economy. This necessitates the need for a nation to be well integrated into the world economy. Immanuel Wallerstein incorporates the Schumpeterian and Kondratieff growth cycles in his analysis using world economy model and highlights the interlinked nature of the economy-technology-security nuances of national growth. An analysis of 60-year Kondratieff cycles over the past 250 years establishes the fact that world economic growth is linked to the emergence of "dominant technologies" in each cycle. Each of the past K-wave/cycle tends to be associated with significant technological changes, around which other innovations – in production, distribution and organisation – cluster and ultimately spread throughout the economy. Defence industry, for great powers, is a core component of this larger national industrial landscape primarily because it deals with the highest levels of technological innovation and its spin-off effects have far greater economic gains for the nation. Quite logically, Schumpeterian and K-cycle analyses show that the nation that develops and controls 'critical technologies' dominates that cycle and in turn, the world economy. The current cycle is driven by aerospace and information technologies, which indicates the critical areas that the

nation must focus for its investment in the defence industry. It is also indicative of the opportunities and challenges that exist for the industry and entrepreneurs hoping to enter the defence industry segment.

Joseph Schumpeter's pioneering work in economic growth analysis, during the early 20th century, brings out how nations rise by displaying their ability to use technological progress to create growth industries. Mancur Olson's work, decades later, compliments Schumpeterian analysis. A comparative analysis of industrial growth and leadership of Britain, France, Germany, the U.S., and Japan during the five periods or K-cycles since the industrial revolution provide significant empirical data for reasons as to why certain nations are able to rise to industrial leadership, and stay there, than others. A theoretical framework by recent scholars like Espen Moe blends Joseph Schumpeter and Mancur Olson's work to establish three propositions using broad empirical support. These are: -

- Human capital is crucial.
- State must prevent 'vested interests' from blocking structural economic change.
- States that have managed to achieve the above have been characterised by political consensus and social cohesion.

These analyses clearly establish the fact that industrial leadership of today does not automatically translate into future leadership, as technological progress means key industries and critical technologies may not remain the same. This explains why Britain, which dominated two cycles, lost its leadership to the USA in the early 20th century. Analysis of Indian policies with respect to defence industry clearly indicates the failure of Indian policy makers to address the three propositions. Even advanced economies face failures if they do not guard against these observations. The growth process gets stunted due to the following reasons: -

- Slow and steady build-up of rigidities in the economy,
- Vested interests gaining political power,
- And the above two makes it harder for the states to undergo necessary structural and economic change.

As a core industry experiences rapid economic growth, it becomes politically influential. This influence is used to block policies that go against the interests of the industry. Only states that are able to prevent vested interests from becoming powerful enough to block structural change, may entertain hopes about industrial competitiveness, technological growth and economic leadership. Only states characterised by strong political consensus and/or social cohesion have the strength and relative autonomy to resist the power of vested interests. This is possible only when national objective and strategy are clearly articulated and consistently pursued irrespective of changes in political leadership. This is where China scores over others. Technological and economic growth needs technological innovation, knowledge, and human capital. This is pure logic, and does not change with political affiliations!

What are the challenges that a country faces in its quest for technological and industrial growth and leadership? Analysing the arguments of Schumpeter and Olson, Espen Moe reframes the three main conditions for nations to rise to industrial excellence and leadership. For technological and industrial leadership a country needs to fulfil two conditions. First, it must have a “human capital” advantage. Second, it must have weak and fragmented “vested interests”. Countries that have fallen from leadership (or failed to rise – here’s the lessons for India) are as a rule countries with strong vested interests, able to force their preferences on the political leadership. The third condition that needs to be fulfilled is “High levels of political consensus and/or social cohesion”.

In the final analysis, what makes a country rise to technological and industrial excellence is the combination of a high value on the human capital variable and a low value on the vested interests variable, but that this low value is contingent on a high value on the consensus and cohesion variable.

In each of the cases where major powers have lost their dominant positions (Netherlands, Britain and France) or those that have risen from ground zero (Germany, Japan, China, South Korea, Israel) the three variables have played the most critical roles. Of particular importance is the impact that the combined absence of consensus and cohesion have had in making it very hard for those nations to pursue structural changes and follow progressive policies.

Another important challenge for policy makers to consider is the aspect of “technology diffusion”. Any technology that is invented becomes meaningful only when it is translated into a viable industrial product. Once it is translated into industrial production and is made available through commercial ventures the technology gets absorbed through the diffusion process. Diffusion process is often made very slow, particularly across the borders, due to denial regimes as well as other factors such as the ability to absorb the technologies. However, for late starters like India and China diffusion is an important method for not only technology acquisition but more importantly, for development of “Human Capital”. Indian defence industry suffers from, for a variety of reasons, significant shortages in the quality of human resources with the requisite technical skills. By appropriate policy changes that encourage hi-tech investments into the country, the industry can address the “human capital” issue through the technology diffusion route. China is a good example where this has been achieved successfully. With Information and communication technologies being integral to every hi-tech industry, the traditional requirements of basic education that sufficed the industry needs in an earlier age is no more relevant. The need for high quality higher education with aggressive interaction between the industry and the academia should be recognised both by the industry and the government. Nations cannot become great powers if they do not invest in their “Human Capital”. But diffusion is also important. If policies prevent FDIs beyond 49% due to various misconceptions, then FDI in hi-tech areas may not take place. This would adversely impact on innovation and human resource development.

The problem of ‘vested interests’ can be understood well from Espen Moe’s analysis of Schumpeter and Olson models. Schumpeterian analysis brings out the fact that long-term economic cycles are driven by the growth of one or a few leading industries. When these industries saturate (like the British cotton textile industries in 19th century), the world economy drifts into a structural depression that can only be resolved when (or if) new growth industries (like the German chemical industries of late 19th century), based on break-through technologies, provide the world economy with a new industrial engine. This emergence of new technologies to replace old technologies makes the world economy go through, what Schumpeter calls, “waves of creative destruction”.

Depression leads to the destruction of old firms and industries, but also to the creation of new ones. But the established industries and systems/institutions of the past will tend to resist this process. Seeking to prevent the phase of destruction only leads to the silting up of economic rigidities and long-term stagnation. Olson emphasises that if the economy is controlled by vested interests, it loses its ability to change and adapt. The danger of vested interests stymieing growth is even more in developing economies like India.

INDIAN DEFENCE INDUSTRY: STATUS, CHALLENGES, AND OPPORTUNITIES

The history of India's defence industrial strategy is largely rooted in India's strategic outlook. The need for a robust defence industry emanates from requirement for large defence forces in view of the country's immediate security environment, accentuated by long-standing disputes with Pakistan and China. India's policy of non-alignment, strategic autonomy, and its desire to be free of any vulnerability with respect to its military capability were the reasons for its intended policy of indigenous production of most of its weapons. This, however, turned out to be largely licence-production of imported weapon systems. The desire for self-sufficiency in weapon systems had produced mixed results over the last 67 years. Its success in strategic areas such as Space, nuclear, and Strategic missile capabilities has been achieved due to a focused approach with clarity in end-state objectives aided by dedicated and efficient organisational structures of ISRO, DAE, and IGMDP. What is interesting is that these organisations have also contributed immensely in evolving an efficient industrial eco-system of SMEs (Small and Medium Enterprises) in the private sector. On the other hand, the defence industrial sector is huge, entirely in the public sector, and was characterised by licence-production culture, inefficiency, and multitude of organisational structures without clarity of objectives.

To start with, the creation of public sector units were necessary as the defence sector needed huge investments and the necessary direction, which could only be given by the government. Domestically produced arms were seen as necessary for guarding against the manipulation of weapons supplies, including spare parts, which might otherwise be

undertaken by foreign suppliers with their own policy objectives. In theory it also had a clear economic rationale. But this came at a cost, as the entire domestic production of weapons was restricted to licence production. Indian policy of restricting arms production to the public sector, and its policy of not allowing arms export on moral principles were based on complete misunderstanding of the process of technology acquisition and development. Raju Thomas highlights the critical issue for the success of indigenous production – “a policy of indigenous weapons production would mean a substantial increase in the scientific and technological knowledge of the country with attendant benefits for the civilian sector as well”. This would mean indigenisation be crafted in a strategy of ‘military led industrialisation’.

India’s defence industry has been largely located in state owned enterprises until now. The current efforts of the government to open up the defence sector to the private industry are a continuation of the process initiated in 1991. In 2001, the government constituted a committee under the chairmanship of Dr Vijay Kelkar, to examine the process of allowing accelerated participation of the private sector in the defence industry. The undersigned attended virtually every meeting of the committee in 2004 and 2005. Even a decade after the report was submitted, the government is far from implementing the core recommendations. Hence, the current enthusiasm will mean little if the current status; problems and challenges are not addressed. These need to be examined in the context of the three observations of “Human Capital, Vested Interests, and Political Consensus and Social Cohesion” as brought out earlier.

Vested interests – External: The entire Indian defence industry complex came up, under state control, during the Cold War period. The dependency factor was addressed to a limited extent as aircraft, systems and weapons were produced under licence in 39 ordnance factories and 9 DPSUs (Defence Public Sector Units). However, components and materials sought to be substituted with indigenous materials and components, as part of import substitution strategy, failed to materialise. There were many reasons for this, the main being vested interests of the foreign OEMs and countries, which ensured that our contracts for licence production, were limited for Indian armed forces only. Thus, Indian manufactured components and spares were never used for the

global market of the same product nor did India get the benefit of being a partner sharing the MRO business of the world market. This limitation had very adverse impact on the technology absorption capability of the Indian DPSUs and this was exactly what the OEM had aimed to achieve and continue to do so. India's policy of segregating civil and military industries helped these vested interests. The most striking example is the isolated functioning of the civil aviation and military aviation sectors. Indian civil aviation never capitalised its huge purchases to create synergy in technology acquisition in the aviation industry nor did it even attempt at exploiting the huge MRO market for its benefit.

Developing countries aspiring to build a military-industrial capability for themselves had to battle against the challenges of limited availability of industrial, scientific, educational, and economic resources. For licence production model to be beneficial in enhancing technological capability, a developing country like India was required to follow the model of "the ladder of production". It describes a 'rational' progression of technology absorption and production capabilities.

THE LADDER OF PRODUCTION

1.	In the initial under industrialised state, the Less Developed Country (LDC) purchases foreign weapons systems, and relies heavily on foreign trainers, technicians, and advisors.
2.	As the industrial and technical base matures, the LDC assumes greater responsibility for upkeep, maintenance, and repair of weapons, decreasing reliance on advisors and technicians.
3.	After extensive familiarisation with the new technologies, states move to local assembly of foreign weapons from imported components.
4.	Assembly, in time, leads to licensed production with increasing proportions of local content and decreasing reliance on imported components and parts.
5.	Technological assimilation through use and production, in theory, leads to eventual use of acquired infrastructure for local research and development (R & D), weapons design, and completely indigenous production.

One of the essential requirements of mastering stage 4 & 5 of the ladder of production is to ensure that the local production houses become part of the global supply chain as well as global MRO centres. This, however, does not happen as the contracts limit local production houses' role to internal requirements alone. This militates against the economies of scale necessary for energising the drivers of innovation and development. Lack of export orientation leads to less sophisticated nature of locally manufactured products, and continuing dependency on imports of advanced weaponry. Analysts indicate that this import dependency, created by the 'vested interests', leads to a gradual shift from imports of finished products to imports of manufacturing technology, known as technology dependency. Viewed from this angle, it becomes obvious that the entire DPSU sector have become technology dependent. On the other hand, if export orientation had been there from the beginning it could have resulted in an innovation driven sector that could have broken the externally driven vested interests. Thus absorption of manufacturing technology and know-how combined with lower production costs would have eventually allowed the Indian manufacturer to export the product back to the original producer.

Vested Interests – Political: Political interests have created vested interests of their own that have gone on to play a disruptive influence on the defence industry. In the early years after independence, the government made a conscious decision to locate major PSUs across the country to ensure balanced development of all the regions of the country. This was understandable as the nation's industrialisation had to start from scratch. Similarly, Public Sector Units (PSU) provided the major avenues through which the government could address various social objectives of employment, affirmative action, and rural development. That these objectives were met is unquestionable. Political parties competed with each other to be seen as espousing these social objectives. Defence PSUs were no exception. In fact, they provided the most attractive opportunity for the political parties to vie for locating DPSUs in their constituencies, as they brought in huge investment and employments were secured in concrete. It provided a huge electoral guarantee to the party in power. These social objectives were achieved at a huge long-term cost to the nation as explained below.

Defence industries are hi-tech ventures that are capital-intensive,

need highly skilled and well-trained manpower, and need to be located in areas that would promote their ancillary industries. In short, each DPSU should have encouraged related clusters around it. In reality, the DPSUs have all been located across the country with little relevance to these issues. As a result, the defence industrial ecosystem of MSMEs has hardly come into effect. Since not adequate attention was paid to the development of the ecosystem or the tier1, tier2 and tier3 industries, the DPSUs have attempted to take on all the activities. As a result, most DPSUs, HAL in particular, have little success to show their contribution towards MSMEs advancement. The different divisions of the 39 Ordnance Factories and the 12 DPSUs are scattered across the country, more due to political and social compulsions than any technical logic of facilitating the development of related clusters.

It is an open secret that many hi-tech weapons acquisitions have been influenced by political patronage. A combination of Cold War compulsions and its related strategic compulsions, and the vast variety of technicalities in the defence sector (unlike Space and Atomic Energy), have all contributed for the field to be exploited for political machinations. This has been and continues to be one of the critical factors contributing to the failure of the indigenisation process over the last five decades. This can only be resolved in bringing the defence industry strategy to be executed and monitored by a national level apex body, directly accountable to the PM.

Vested Interests – Structural and Bureaucratic: The third important ‘vested interests’ come from the structural and bureaucratic systems of the defence industry. For more than five decades India’s defence production has been entirely in the public sector and this, combined with India’s policy of not exporting defence equipment, has been entirely inward focussed in terms of business. Every acquisition, whether through licence production or indigenous development were nominated to the DPSUs. And because the orders were limited to local requirement, the DPSUs have ended up doing 90-95% of the work on a product in order to retain maximum business. This has created vested interests of its own, and the result has been a negative impact on development of ancillary industries. With the economy opening up, and the entry of private sector, it has necessitated the acquisition process to be competitive. The Department of Defence Production (DDP) has

been the nodal department that controls all the DPSUs and the OFs (Ordnance factories). The bureaucracy (administrative and finance) in DDP has always viewed the DPSUs and OFs as their own rather than take a nationalistic view of the defence industry (both Public and Private) as such. Thus DPSUs and OFs have used their influence on DDP to be nominated for all projects, in spite of their capacity constraints, at the cost of private sector development. Private sector has been viewed as a threat to their business and survival. The role of the unions in this perception is considerable. The solution for this problem lies in restructuring the DPSUs on corporate model and use significant private participation in a risk-sharing model. The DDP, with its sense of ownership only towards the government owned companies, has outlived its utility and now acts as a major impediment to the larger interest of defence industrial ecosystem development. Participation of government bureaucrats and other officials in the board of directors of PSUs is a serious conflict of interest.

Human Capital: Defence industry's need for "Human capital" with high level of education and skills is well established. The need for high quality "human capital" in the coming years will be hard to meet. The issue gets worse due to archaic policies that have been followed so far with respect to technical manpower. Since the entire defence production has been in public sector, the development of 'human capital' was compromised for political and social objectives. All public sector units had to comply with policies with respect to reservation, lower standards of academic performances that had to be accepted when employing in respect of disadvantaged sections of the society, promotions policies that were not based on merit, lack of hire and fire policies, and strong employee unions that were politicised in order to exercise over-bearing control on the management at the cost of production efficiency. These have resulted in inefficient work culture, and poor track record in respect of meeting production deadlines and objectives. In addition the overall education system lacks proper linkage and coupling with the industry in respect of technical education. Institutions like the IITs are too few to make any difference. It is a known fact that top-notch private sector industries such as the Tatas and Infosys have major training programs to bring the selected candidates to the required basic level. India churns out lakhs of engineers every year but industry inputs indicate that over 80% of them are of unusable quality at the high-end tech industries.

If the country has to make a success of the “Make in India” objective, these serious drawbacks in the “human capital” domain will need to be addressed.

Political Consensus and Social Cohesion: India is a huge and vibrant democracy, and a country of huge political diversity. While the former is a significant strength, the latter functions as a huge ‘vested interest’ group that focuses only on self-serving gains and short-term political survival. As a result the country rarely exhibits unity of purpose when taking decisions with respect to defence industry and defence economics. Depending on the political party in power, decisions taken are invariably at different ends of the spectrum or deeply polarised. As a result India’s objective of achieving self-reliance has rarely been pursued with any coherent strategy as against often-vociferous articulation of the same by the government of the day on public platforms. Clarity in the articulation of national objectives/national security will bring about a cohesive approach when dealing with defence economy and defence industry. More importantly, it should be highlighted that narrow political self-interests have led to decisions that have created a separation of the civil industry from the defence industry. The most striking example is in the separation of civil aviation from military aviation, wherein the two departments have worked at conflicting purposes to create ‘vested interests’ rather than create a synergy for the nation in research and industrial activity. Only states characterised by strong political consensus and/or social cohesion have the strength and relative autonomy to resist the power of vested interests.

INDIAN DEFENCE INDUSTRY – OPPORTUNITIES

India is now a recognised emerging power, and by the middle of the 21st century India is expected to become one of the six pole powers in a well-balanced multi polar world. To be a pole power the country will need to be recognised as a major manufacturing power of hi-tech products with control over critical technologies. India has continued to figure as one of the top three importers of weapon systems for nearly two decades. India has the third largest armed forces in the world, and equally large paramilitary forces. In the next five years, India is expected to spend close to 100-150 billion USD on acquisition of military hardware. This

figure will rise to over 250 billion USD in a 10-15 year period. It would be foolhardy to spend this staggering amount on imports. If the 'Make in India' program is implemented with the right strategy it will generate huge opportunities for Indian industries.

India's military modernisation is already underway and encompasses major transformational requirements in the areas of communications, data-links, data-fusion, sensors, precision guided munitions, Space based services including intelligence, surveillance, and reconnaissance, RPVs(Remotely Piloted Vehicles), Weapon systems including small arms, artillery and missiles, electronic warfare systems, aircraft, ships and submarines, and tanks and armoured vehicles. This wide range of requirements offers huge opportunities for Indian industries to enter into substantial manufacturing activities. It should also allow massive opportunities for small and medium enterprises to enter into component and spare manufacturing sector. These opportunities can be converted successfully only when the Indian industry becomes part of the global supply chain and becomes a significant exporter in the component and MRO sectors.

CONCLUSION – THE WAY FORWARD

The new Indian government under Prime Minister Modi has expressed serious concern at the minimal share of indigenous defence equipment used by the Indian armed forces. Nearly seven decades after independence India continues to import 70% of its military hardware. Although India has successfully demonstrated that it could design, develop, and put together major weapon systems like the fighter aircraft, Main Battle Tank, Ships and submarines, it has not paid adequate attention to the industry that would develop control over its supply chain on components, subsystems, and materials technologies. As a result, India pursued for over 50 years, and failed to achieve, the elusive goal of "self sufficiency", that is independence in production of all major combat equipment. The reason for this failure is the excessive dependence on licence production (even though it covered all major combat equipment from ships to aircraft), which in turn meant continued dependency on foreign supply.

An important theory in the development of defence industry

for developing countries and emerging powers is the concept of the “ladder of production” as brought out earlier. Deeper analysis shows that India has consistently violated this theoretical ladder, skipping or ignoring steps in pursuit of symbolic goals. It has regularly rejected the option of using local R & D to make incremental improvements to existing arms but instead preferred to purchase or develop entire new systems. The separation of the Indian defence sector from the private industry has isolated it and prevented an effective contribution to the national economy. For example, in the aerospace sector, sophisticated manufacturing technology imported at enormous expense has had virtually no impact on the national economy. The separation of civil and military sectors was necessary in earlier times due to different quality standards. With rapid developments in information technology and advances in manufacturing, the quality and certification standards of the civil sector has come to match the military in the developed world. With rapid growth of Indian economy and its globalisation, quality in civilian manufacturing in many sectors now approaches or exceeds Western standards. It, therefore, makes economic sense in integrating military and civilian sectors in order to synergise technical competence and boost manufacturing capability. A restructuring of the DPSUs and OFB, on the lines of private sector, and forcing them to compete internationally will yield good results. Kelkar committee highlighted the inadequacy of the Indian military-industrial policy in 2005 wherein it stressed on the importance of private sector to be involved in defence R & D and production efforts.

Another major weakness in the Indian defence industry is the virtual absence of a significant refit and modernisation capability. If the “ladder of production” concept had been followed it would have built strength through incremental approach by gradually increasing ability to modify existing equipment for the local combat environment or to extend service life. By focusing almost exclusively on the production of major weapon systems and platforms, India missed the opportunity to energise innovation that would have addressed components replacement and adaptation of own technology solutions to improve or replace spares and maintenance equipment.

Skilful use of existing industrial infrastructure and more sophisticated foreign partners creates genuine opportunity for India’s military industry

to make significant strides in the near future. The private sector has built significant strengths in IT (Infosys, TCS, Wipro, HCL etc are good examples), Telecommunications, Space technology, nuclear applications, heavy industry, materials, automobiles, consumer electronics etc. Advances in ITES has enabled cross application and merger of civil and military sectors in many areas. If the defence sector were opened for flow of technology and expertise from civil sector, it would energise the defence industry through healthy competition. Skilful use of foreign expertise through intelligent FDI policies would contribute immensely to job creation in hi-tech sector and skill development. The government, while pushing for “Make in India” policy, should be careful not to create a barrier for high-end technologies from abroad.

That the “Make in India” drive is not just a slogan but just the beginning of a host of measures intended to radically reform the entire gamut of industrial policies was well demonstrated by the public pronouncements by the PM in his inaugural address at the ‘AeroIndia 2015’ on 18 Feb 2015 and by his cabinet colleagues during the recent ‘Vibrant Gujarat’ conclave and the Global Economic Forum conclave convened by the Economic Times. Major issues that hinder growth have been identified – archaic labour laws, poor judicial system at the lower level, Tax terrorism, Poor infrastructure (bad roads, power cuts, inadequate water supply), endless amount of paper work, unskilled labour, lack of coherent and intelligent export policies. Industrial policies will need to be revised on a war footing.

Major Indian private companies will need to adopt a global approach to their strategies. They also need to execute their responsibilities as champions of industries by enabling their MSME through long-term business tie-ups and handholding. In this their performance so far has been unsatisfactory.

“India’s strategy of self reliance in defence industry so far has been a failure primarily due to lack of political will and understanding, and the vested interests created by a power-centric generalist bureaucratic system. The success of ISRO and DAE are primarily due to their Strategic management and execution by professionals and technocrats, and equally by the inability of the generalist bureaucracy to intervene. “Make in India” can become a reality only if its strategizing and executional powers are vested with professionals and technocrats while

the generalist bureaucracy is made accountable as policy facilitators.

In the final analysis, Indian defence industry is at the cross roads of huge opportunities. As we can see the government is serious in bringing about transformational changes. The signs for major policy changes are clearly evident. But these alone are not enough. The government will need to ensure that the three main variables – strong ‘Human capital variable’, Fragmented ‘vested interests’ variable, and strong ‘political consensus and social cohesion’ variable – need to be addressed. There are also signs of discomfort in those countries and agencies abroad that hitherto have benefitted from their vested interests. The government must stay on course to thwart these attempts. More importantly, short-sighted approach of some of the Indian industries and chambers’ are certainly counterproductive to the government’s efforts. They will need to reform. In spite of all these, one can firmly say that the future of the Indian defence industry has never looked better than as it does now.

REFERENCES

- **Cohen, Stephen P.**, *India: Emerging Power* (Washington DC: Brookings Institution Press, 2001).
- **Creveld, Martin Van.**, *Technology and War* (New York: Free Press, 1991).
- **Gilpin, Robert.**, *The Political Economy of International relations* (Princeton: Princeton University Press, 1987).
- **Kennedy, Paul.**, *The Rise and Fall of Great Powers* (London: Yale University press, 1989).
- **Hoyt, Timothy D.**, *Military Industry and Regional Defence Policy: India, Iraq and Israel* (New York: Routledge, 2007).
- **Malik, Mohan.**, *Technopolitics: How Technology Shapes Relations Among Nations*, *The Interface of Science, Technology and Society*, 2009.
- **Modelski, George and William R Thompson.**, *Leading Sectors and World Powers* (Columbia: University of South Carolina Press, 1996).
- **Moe, Espen.**, *The Economic Rise and Fall of the Great Powers: Technological and Industrial leadership since the Industrial revolution*, *World Political Science Review*, Volume 3, Issue 2, 2007.
- **Olson, Mancur.**, *The Rise and Decline of Nations* (London: Yale University Press, 1982).

- **Olson, Mancur.**, *Power and Prosperity* (New York: basic Books, 2000).
- **Schumpeter, Joseph A.**, *The Theory of Economic Development* (London: Transaction Publishers, 1934), 2000.
- **Thomas, Raju G.C.**, *Indian Security Policy*, (Princeton NJ., Princeton University Press, 1986).
- **Weiss, Charles.**, *Science, Technology and International Relations*, *Technology in Society* 27, no 3, 2005.

AIR MARSHAL M MATHESWARAN AVSM VM PHD (RETD)



Air Marshal M Matheswaran was the Deputy Chief of Integrated Defence Staff at Head Quarters IDS until his retirement On 31 Mar 2014. He was responsible for Policy, Plans and Force Structure development of the Three Services, including budget analysis, Acquisition, procurement and technology management. He was responsible for formulating the long-term and short-term integrated defence plans. Air Marshal M

Matheswaran was commissioned in 1975. He is an alumni of National Defence Academy. His academic achievements include Master's, M Phil, PhD in "Defence and Strategic Studies" (University of Madras) and a Post Graduate Diploma in Financial Management. He is a Senior Fellow of Executive Education Program on National and International Security, Harvard University- John.F.Kennedy School of Governance. He is alumni of Defence Services Staff College and National Defence College. He began his military career as a Fighter Pilot and has commanded a Jaguar Strike Squadron. He is a 'Fighter Combat Leader' from the IAF's Fighter Weapons School - TACDE (Tactics and Air Combat Development Establishment) where he later served as Directing Staff and Deputy Commandant. He is an Experimental Test Pilot and has flown over 3200 hrs in 40 types of aircraft including transport aircraft and helicopters. He went on to command the prestigious Flight Test Centre - ASTE (Aircraft and Systems Testing Establishment).

He has held various important Operational and Staff appointments in many different fields, thus acquiring considerable expertise in a variety

of domains. Some of these are – Chief Operations Officer of a major airbase, Jamnagar, during “Op Parakram”, Director of Concept Studies, Founding member and Director of Ops in SFC (Strategic Forces Command), Director of Air Staff Inspection (DASI), Principal Director of Air Staff Requirement. He was the Air Officer Commanding of HQ Maritime Air Operations during 2008-09 and handled the air support activities for tackling the Mumbai terrorist attack of 26/11, Assistant Chief of Air Staff for Operations (Space, Information and Electronic Warfare). He was the Senior Air Staff Officer (SASO), in charge of operations in Eastern Air Command before his last appointment. He is a well-known thinker and strategist in national and international strategic circles.

He study reports on LCA and the Kaveri Engine programmes have resulted in the government taking important decisions on these projects. He has submitted a major study on the Indian Aeronautical sector in March 2014. Post retirement he has been appointed as “Advisor-Strategy” to the Chairman, Hindustan Aeronautics Ltd. He is also a member of the Executive Council (Governing Body) of the IDSA (Institute of Defence and Strategic Studies).

Guidelines for Contributors

The *CASS Journal* is a quarterly, refereed research periodical published by Menaka Prakashan in association with Centre for Advanced Strategic Studies, Pune.

SUBMISSION OF ARTICLES

The Journal welcomes full-length analytical articles ranging between 3500–5000 words. Authors are requested to submit their papers in an electronic/soft format (in MS WORD, preferably in Indian or British English) to the following email id: casspune@yahoo.com/director@cfass.org.in. All correspondence between the Journal editorial team and authors and reviewers will be conducted via email.

Submission of an article implies that the work described has not been published previously, that is it not under consideration for publication elsewhere, that its publication is approved by all authors and that, if accepted, it will not be published elsewhere in the same form without the written consent of the copyright holder.

The Editor reserves the right to make a final decision on publication as well as the right to make alterations. Selected contributors will be informed of the selection of their paper/article via email.

COPYRIGHT/AUTHOR'S RIGHTS

The copyright of the Journal rests with the CASS. As an author you retain certain moral rights on the work and can use or disseminate it—with the permission of the copyright holder—for scholarly and for research/ teaching purposes.

SUB-HEADS/LEVEL-HEADS

Divide your article into clearly defined and/or numbered sections.

REFERENCES

Responsibility for the accuracy of bibliographic citations lies entirely with the authors. Each reference/citation should be clearly inserted either as a footnote or an endnote in the format listed below, with the corresponding in-text cue. Additional references should be listed after at the end as 'Additional References'. In case of Web references, as a minimum, along with the author/publication details, the full URL should be given as well as the date on which the URL was last accessed.

PROOFS

One set of page proofs in PDF format sent by e-mail to the corresponding author(s). The authors must mark their corrections clearly on the PDF itself or on hard copy and send a scanned file of the corrections within the stipulated time. In case the author's corrections are not received within the stipulated time, the Editor will carry out such corrections as deemed necessary.

SUBSCRIBE NOW

Please tick the relevant boxes, fill contact details, enclose cheque/draft and return to address given below

English Edition: 1 year (4 issues) – ₹ 2,000 (includes postage)



Please make the payment in favour of MENAKA PRAKASHAN

Name:

Address:

City: Pincode:

Telephone: Mobile:

Email:


Menaka Prakashan

Publication division of **MEDIA NEHT...**

2117, Sadashiv Peth, Vijayanagar Colony, Pune - 411 030
Phone: (020) 2433 6960 | Helpline: +91 9823 69 69 60

Email : sales@menakaparakashan.com

Subscribe online at: www.menakabooks.com

SUBSCRIBE NOW

Please tick the relevant boxes, fill contact details, enclose cheque/draft and return to address given below

English Edition: 1 year (4 issues) – ₹ 2,000 (includes postage)



Please make the payment in favour of MENAKA PRAKASHAN

Name:

Address:

City: Pincode:

Telephone: Mobile:

Email:


Menaka Prakashan

Publication division of **MEDIA NEHT...**

2117, Sadashiv Peth, Vijayanagar Colony, Pune - 411 030
Phone: (020) 2433 6960 | Helpline: +91 9823 69 69 60

Email : sales@menakaparakashan.com

Subscribe online at: www.menakabooks.com

CASS JOURNAL

NATIONAL SECURITY NATIONAL DEVELOPMENT



CENTRE FOR ADVANCED STRATEGIC STUDIES

CASS JOURNAL

NATIONAL SECURITY NATIONAL DEVELOPMENT



CENTRE FOR ADVANCED STRATEGIC STUDIES