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 Avademy 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

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

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 hairman, Centre for Advanced Strategic Studies, Pune.
- Air Chief Marshal PV Naik, PVSM, AVSM, (Retd) Former Chief of the Air Staff, IAF.
- 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 V G Patankar, PVSM, UYSM, VSM (Retd) Former General-Officer Commanding, 14 corps.
- 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.
- Maj Gen Shishir Mahajan SM, VSM, (Retd) Former General Officer Commanding 23 Inf Div and the current Deputy Director, Centre for Advanced Strategic Studies, Pune.

CASS Journal
Volume 3, No. 4, October–December 2016

Contents

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

"What history teaches us is that
we have never learned anything from history"

Georg Hegel, German Philosopher

The dastardly attack on the Indian Army camp at Uri on 18th September by Pakistan sponsored terrorists has galvanised the nation into strident demand for reprisals. It can be argued that India's cautious approach in refraining from any military response, allows Pakistan to use proxies to 'bleed us with thousand cuts'. Aware of her asymmetry Pakistan also continues to brandish their 'tactical Nuclear weapon' as a convenient ploy to avoid any direct military war with India.

However, we needed to call this bluff sooner than later. The entire nation is therefore proud of the surgical strikes, which were carried out in the early hours of 29th September, neutralising a number terrorist launch pads across LoC. It was a well coordinated plan with accurate intelligence and ensuring no causalities to our brave soldiers of Special Forces. Such resolve at the highest level of National leadership has dispelled the notion of India being a 'soft state'. India is also using all other options to isolate Pakistan diplomatically and economically. It is time that Pakistan is declared a terrorist state. India is also exposing Pakistan's brutalities in Baluchistan and the journal carries an article on this subject by Air Marshal Anil Trikha.

Diplomatically the Indian sub-continent seems to have come full circle.

In spite of having faced technology denial and other sanctions earlier, India is seemingly getting closer to the US, not only by way of purchasing military hardware but also by signing significant bilateral treaties like LEMOA. On the other hand, Russia known to be India's traditional friend, is for the first time carrying out joint military exercise with Pakistan. In July 2016, Pakistan's cabinet has also given a go-ahead for signing a long term defence agreement and security cooperation with her 'all weather' ally China, apparently to keep India on her toes while catering to a 'two front contingency'. In this new equation, the Indo-US realignment is also fraught with many challenges. Various nuances of the Indo-US defence cooperation have been analysed in an article by Air Marshal Nirdosh Tyagi.

For the Indian Air Force there is good news at last. In some measure the dwindling aircraft strength of IAF will be bolstered with addition of 36 Rafael fighters, deal for which was finally inked after protracted negotiations. While the distinct advantages of potent Aerospace power need no elaboration, issues such as ownership, control and coordination, especially in joint operations are often debated. This issue carries an article by former Naval Chief and an aviator Adm Arun Prakash, on the use of air and space power in Joint Operations.

With a vast coastline, India is the only country to have an ocean named after her. However, we are yet to exploit the full potential of maritime wealth to our advantage. Instead, a number of other nations are taking advantage of our neglect. The issue therefore carries two articles on this important segment of nation's economic and military power by former Indian Navy officers, Advocate Abhijit Bhattacharyya and Prof Ashok Soman. Brexit was a landmark judgement of sort impacting European unity and raising questions such as how much sovereignty a nation is prepared to forgo for regional groupings to work. Dr Anil Nene, a resident of UK reflects on this exit vote. Apart from Brexit the EU is also being impacted by refugee crises and the turmoil in Turkey in the aftermath of recently failed coup of July 2016. Group Captain PI Murlidharan, who had served in the Indian Embassy at Ankara analyses the current situation in Turkey.

The issue also carries an article written by Air Marshal Pramod Athawale on 'Credible Air Power' in which the author brings into focus the complexities of 'Make in India'. It is certainly a challenge to all, the policy makers, industry and the operators. There is also an article by Group Captain PI Muralidharan on Search and Rescue operations in the aftermath of missing An-32 aircraft of IAF since May 2016. I would add that all aircraft should be fitted with

automated distress radio transmission system, similar to the ones fitted on some of the fighter aircraft e.g. Natasha Automated Voice Information Reporting System. This will not only let others know of the emergency, but it could also give a position fix in such catastrophic events.

The Journal carries a well researched article by Col Tushar Ghate on 'Dirty Bomb' and explains various aspects involved in accessibility of fissile material for making such device as well as precautions to avoid such threats turning into reality. The issue also carries a Book Review by Captain Milind Paranjpe on 'Pacific', a book written by Simon Winchester, which captures many interesting facets of this ocean including uncomfortable facts such as the vast number of nuclear tests which were carried out on tiny islands located in the Pacific Ocean, without much thought of its impact on the health of native population.

I wish to thank all the authors, subscribers and the readers for your continued support.

Jai Hind.

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

Date: 30th September 2016

Air & Space Power In Joint Operations:* A Naval Perspective

Admiral Arun Prakash (Retd)

Introduction

Since air covers 100% of the earth's surface, it has become the operating medium which permeates all domains. The past hundred years have seen air power becoming progressively more lethal, pervasive and omnipotent. Today, any target, anywhere, that is detected and identified, can be destroyed from the air, within a matter of minutes. Since air power has become intrinsic to every form of military operations - on land, at sea or in the air – there is fierce competition amongst the three armed forces, for a share of the budgetary cake to augment aviation capabilities. It is therefore appropriate that the role of air power in securing national interests receive close scrutiny by the informed taxpayer; and the Centre for Advanced Strategic Studies is an eminently suitable forum for initiating such a discussion.

Winston Churchill had something to say on almost everything under the sun, but air power seems to have stumped him; *'Air power is the most difficult of all forms of military force to measure, in precise terms. The problem is compounded by the fact that aviation tends to attract adventurous souls, physically adept, mentally alert and pragmatically rather than philosophically inclined.'* I am not sure whether the 'old bulldog' was being sarcastic or offering a complement to aviators; but today,

* Adapted from the Air Marshal YV Malse Memorial Lecture delivered by the author on 12th July 2016 in Pune.

ISSN 2347-9191 print

CASS Journal, Vol. 3, No. 4, October–December 2016, pp. 11–23

air forces seem to have found a practical description of air power.

The IAF Doctrine describes it thus: '*Air power, in a classic sense is defined as the total ability of a nation to assert its will through the medium of air. Air power is the strength of an air force as opposed to an attendant capability. The strength of India's air power lies in the IAF with the capabilities of air arms of the other services reinforcing that strength.'*

Britain's Royal Air Force sees air and space power in a somewhat broader perspective as; *'The ability to project power from the air and space to influence the behaviour of people or the course of events….. British air and space power is, however, not delivered by the RAF alone. Inherently joint, and drawn from all three Services, it is a product of many factors including: the organic aviation assets of the other Services and the resources drawn from alliances and partnerships.*

Air power, since its inception, in the first decade of the last century, has remained the cause of fierce controversies and debates over resources, roles and missions as well as institutional boundaries. In this context, the definitions, just cited, have not helped resolve all the conundrums. For example, many people use the terms 'air power' and 'air force' interchangeably; which may not be appropriate considering that all three services own some air power.

Another complication arises from the description of air power as 'indivisible'. While 'indivisibility of air power' may be a good theoretical construct, it instantly raises two questions. One; who owns air power? And two; how is air power to be deployed or shared to fulfill the vital operational needs of the army, navy and air force?

I will return to these issues, but let me, at this juncture, delve a bit into the past. The growth of air power in India has been synchronous, if not simultaneous, with that in the West, and the roots of many problems that we face, can be traced to the history of aviation, to which I will make a brief reference, for the purpose of drawing some lessons for the future.

Historical Backdrop

WW I war saw armies making horrendous sacrifices for gaining or losing a few yards of territory, and the total casualties on battlefields of France exceeded those in all previous conflicts put together. It was this mindless slaughter that gave rise to concepts of air-power as an instrumentality for obtaining swift and easy victory without huge armies getting bogged down in unending trench warfare.

Just seven years after the Wright brothers had ushered in the epoch of aviation, an intrepid American named Eugene Ely pioneered ship-borne air

operations. In November 1910 he undertook a breath-taking launch from a wooden platform fitted in the bows of a US Navy cruiser and, two months later, performed the equally difficult task of landing on the stern of another cruiser at anchor. Aviation was now ready to go to sea as an integral part of navies.

In April 1913, Britain constituted the Royal Flying Corps (RFC) with Naval and Military wings. A year later, naval aviation was recognized as a new branch of the Royal Navy and the Royal Naval Air Service (RNAS) came into being, with its own rank structure. With the onset of WW I, the RFC was despatched to France to provide support to the army, while the RNAS was deployed from ships and ashore in maritime operations.

The end of WW I saw a number of developments which were of great significant because of their impact on the future of air power. 1918 saw the merger of the Royal Flying Corps and the Royal Naval Air Service, resulting in the birth of the world's first independent air force: the Royal Air Force. Naval air power also became an established reality, with the first aircraft carrier being completed in 1918 in the UK; adding a new dimension to air warfare. However, control of naval aviation remained with the Air Ministry and despite a great deal of protests and lobbying, the Royal Navy did not regain control of its air arm till, just before the outbreak of WW II, in 1939.

The inter-war years saw proponents of air power, like Air Marshal Trenchard in Britain and Brigadier Guilio Douhet in Italy, strongly advocating strategic bombing of the enemy as a stand-alone strategy. In an influential 1921 study, titled *Command of the Air,* Douhet contended that modern airpower rendered armies and navies largely obsolete. Aircraft could simply fly through all opposition to strike at the heart of an enemy. Once air superiority was established an enemy was doomed to suffer continual bombardment. Command of the air, according to him, meant quick, total and cheap victory.

Douhet considered the use of air power for close support of ground formations as potentially *"useless, superfluous and harmful*" because it detracted from the main effort of dominating the enemy. Due largely to the endeavours Douhet in Europe, Air Marshal Trenchard in Britain and Gen. Billy Mitchell in the USA, the idea of strategic bombing as a means of destroying enemy industrial potential and breaking civilian morale became firmly entrenched into the military mindset.

In WW II, air power played critical roles at defining junctures, such as the Dunkirk retreat, the Battle of Britain and the Normandy landings. Doctrinally speaking, however, I would pinpoint three developments, which were to have

far reaching implications for air power. First was the concept of *Blitzkrieg* in which fast moving armoured columns, supported by furious air assault by the *Luftwaffe* resulted in the swift German victories in 1939. This was repeated in Hitler's Russian campaign. Second was the commencement in, 1940, of a campaign of strategic bombing, which aimed at destroying Germany's industrial base, breaking the will of its people to fight and bringing the war to an early conclusion. It

The third development, in December 1941, saw the decisive superiority of air power being established at sea. On 7th December, in a surprise attack on Pearl Harbour, Japanese carrier-borne aircraft inflicted heavy damage on assets of US Pacific Fleet. Three days later, shore-based Japanese bombers surprised and sank the powerful British battleships *Repulse* and *Prince of Wales,* in the South China Sea. Carrier-borne air-power served to influence operations in all theatres of WW II and resulted in the aircraft carrier displacing battleships from the centre stage of maritime power.

As far as strategic bombing of German cities was concerned, post-war analysis found little evidence to suggest that it had an impact on the will to resist. Production of steel, aircraft, tanks and ball-bearings in Germany actually showed a rise through the 1000-bomber raids in 1944, and Berlin eventually fell to Russian and Allied ground forces. Notwithstanding this, the idea that strategic bombing, alone, was the path to victory has endured in modern warfare. A continued belief in the decisiveness of strategic bombing was the hallmark of the US Air Force approach to post-WW II conflicts like the Korean and Vietnam wars.

In the post-Cold War era, deployments of air power in the Balkans, the Persian Gulf, Afghanistan and thy Middle East, opened a radically new chapter in air-power, as far as stealth, precision weaponry, information dominance and C4ISR were concerned. New terms like 'strategic paralyses', 'shock and awe' and 'air dominance' came to be associated with the aggressive and imaginative deployment of air power.

A hundred years after Douhet and Trenchard, the belief in indivisibility of air power is still prevalent, but strategic bombing has been substituted with the new 'air dominance' paradigm. It is now said that modern air power may have rendered ground forces obsolete, and quick military victories can be won, after establishment of air dominance, at little or no cost in lives. In such a paradigm close support of land and maritime forces, is seen as superfluous, and receives low priority.

Without belittling the importance of airpower, there is need for us to tread with caution, here, because of some flawed premises. Firstly; all the recent

conflicts involving air power in Iraq, Afghanistan, Kosovo, Lebanon, Libya and Syria; have been asymmetric; involving on one hand, forces which had the benefits of advanced technology; and on the other, adversaries with little or no air power, and outdated weaponry. More importantly; in none of these conflicts has victory been swift, decisive or cheap. India, on the other hand, is faced with well-equipped, technologically competent and highly motivated air forces; and in our calculus we can neither bank on any specific advantage, nor speak nonchalantly about attaining air dominance.

Clarity in Roles & Missions

As we look to the future, we need to avoid the air power related acrimony that has often soured inter-service relations in the past. Borrowed paradigms do not always work and it is necessary to establish clarity in the relationship between air and surface forces, unique to the Indian environment. This is necessary, not only to make sound policy decisions relating to budget allocation and force-planning but also for success in operations.

Most armies and navies believe that aviation needs to be an integral resource to provide support of various kinds, and feel that it should be at their disposal to deploy at short notice. Taken to extremes, the conservative soldier or sailor, in fact, views air power as just *'an extension of the gun or missile battery'*. Land forces, whether engaged in conventional or sub-conventional warfare, increasingly see heavy-lift helicopters essential for tactical mobility and attack helicopters as an integral component of mechanized warfare. They also feel the urgent need for a fixed-wing component for communication, CASEVAC and logistics.

Similarly, maritime forces that seek to exercise sea-denial, project-power or establish sea-control would require close air support on a round-the-clock basis. Most warships carry helicopters on board, and, wherever available, aircraft-carriers can provide tactical air support at sea. However, naval aviation resources are generally limited and fleets now face multi-pronged anti-access strategies. Under these circumstances, navies too expect that shore-based air-power would be available in support of long-duration maritime operations; on call.

For air forces, on the other hand, counter-air operations have assumed primacy. Army and navy commanders, who perceive air power as a 'hand-maiden' of land and maritime forces, are increasingly seen as being afflicted with 'tunnel vision'. The air warrior is convinced – probably with justification - that as long as he can prevent hostile air elements from interfering with surface operations, the tactical employment of air power for close-support may be a

waste of resources. He is also convinced that the potential of air power is only understood by an airman; who is also best qualified to deploy it optimally – at the strategic level.

The Worm's-eye View

Experience of conflicts in India has unequivocally demonstrated that; firstly, military operations have a far greater chance of success if they are planned and conducted jointly; and secondly, that air power plays a crucial role in such operations. In the brief 1962 Sino-Indian war, the Chinese PLA had the advantage of numbers, terrain and readiness, but lacked air cover. In such a situation Indian air power – then, technologically superior and readily available – could have stopped the Chinese human-waves. But India's political leadership failed to deploy air power, for fear of escalation; and lost this war.

This lesson ensured that, in subsequent conflicts, early use was made of air power; generally with favourable results. While the 1965 air campaign was seen as a 'draw', India's 1971 air-land and sea campaign in Bangladesh was almost like a *Blitzkrieg;* with air-power in all its dimensions, playing a key role. The most dramatic intervention by air power, however, came in the 1999 Kargil conflict. The Indian army, faced with the daunting task of re-occupying high pickets in mountainous terrain, needed urgent air-support. It was the deployment of fixed-wing fighters, using innovative tactics and smart weapons, in day and night attacks, that turned the tide and helped our ground forces to eject the intruders.

However, Kargil was also to reveal a serious void in joint planning and training. In the words of US air-power analyst Benjamin Lambeth, who wrote an excellent monograph on the Kargil war; *"Without question, the unusually demanding challenges presented by the operation made for a sobering wake-up call for the IAF, which evidently had not given much prior thought to such a scenario and had not trained routinely at such elevations until it was forced to do so by operational necessity."* The onset of war was hardly the time to start training, and this was a clear indication of a doctrinal gap between the army and IAF.

The Roles & Missions Dilemma

It is undeniable that a great spirit of bonhomie and inter-Service cooperation is to be seen in the day to day functioning as well as operations undertaken by our armed forces. But unfortunately, it exists at a personal level, lacks an institutional underpinning and is likely to break down once the two or three-

star level is reached. Moreover a germ of discord, related to air-power 'roles and missions' continues to lurk beneath the placid surface of inter-Service relations. I will provide two examples from our recent history that will illustrate this dilemma.

The maritime reconnaissance and airborne anti-submarine warfare (MRASW) roles had historically been performed, by the IAF since 1951. The navy was, all along, dissatisfied with the arrangement because this highly specialized task was being undertaken by personnel who lacked expertise in maritime-warfare. Moreover, the aircraft assigned to this complex task – WW II B-24 Liberators and, subsequently, converted Super Constellation airliners – were quite unsuitable. Inter-service communication problems further hampered effectiveness. This resulted in an inter-Service quarrel for control of MR-ASW; which sometimes took a nasty turn.

In the 1971 war two Pakistan Navy submarines managed to penetrate Indian waters, undetected; revealing a major lacuna in the navy's anti-submarine defences. One of them sailed over 5000 km, from her home-port, Karachi, to Vishakhapatnam on the east coast, where she sank due to an internal explosion. The other, patiently, lay in wait off the coast of Saurashtra for many days and finally managed to torpedo the frigate INS Khukri, which sank with heavy loss of life.

Post-war analysis attributed blame for this lapse to naval authorities at various levels. However, maritime-reconnaissance undertaken by non-naval aircrew emerged as a major contributory factor. This triggered off a renewed navy-air force tussle over control of MR-ASW. It had to be resolved by the Government upholding the navy's claim and allotting the role, along with aircraft to it in 1976.

The Indian Army had possessed a rudimentary aviation capability since independence, in the form of Air Observation Post, or AOP flights, controlled by the IAF. Keen on acquiring its own aviation assets, the army had been demanding the creation of an integral air arm since the 1960s. The issue became another unsavoury inter-Service squabble, with the army citing inadequate and delayed helicopter support by the IAF for the anti-tank, observation and communication roles in forward areas. The government finally intervened and in 1986 and approved the constitution of the Army Aviation Corps.

The controversy did not end there, because the IAF had retained control of attack helicopters which the army now sought. Finally, in 2012, the MoD announced that the '*control and operation of all future attack helicopters would be with the army.*' Unfortunately, the MoD did not indicate whether it had

undertaken a proper analysis of the issue and established the principles or rationale on which this ruling was based. What appears more likely is that it was just an *ad hoc* ruling to pacify the army; in which case, we may not have heard the last of this issue.

Thus, the IAF, having seen sister Services appropriating its roles and assets, is understandably wary about integration, about jointmanship and even about the institution of a CDS. The lesson that clearly emerges for the three Services is; that if the military leadership does not engage in mutual dialogue and come to a *modus vivendi*, for the optimal utilization of precious air power, a bureaucratic decision may be thrust on them through a political fiat.

Whether they seek to place 'boots on the ground', attain 'sea control' or 'air dominance', all three armed forces, must be prepared face the full brunt of sophisticated enemy air power in operations. The navy has accepted maritime strategist Julian Corbett's dictum that *'Wars are rarely won at sea, by navies; they only make it possible for armies to do so on land'*. Perhaps there is need to adapt this aphorism to latter day circumstances, and accept that, *'Wars are rarely won by a single component of military force. Jointness is the key to victory'*. Recognition of the fact that tactical air support will continue to play a vital role in military operations would be a necessary first step toward a proper understanding of the changing role of air power in joint warfare.

The essential question boils down to whether we should blindly adopt the operational philosophies developed by western militaries; or evolve an India-specific approach to air power based on our own experiences. The IAF, like many other air forces, has been seeking a formal delineation of aviation 'roles and missions' and nomination of 'core competencies' for many years. This demand is justified because there has been a proliferation of aviation wings, not just amongst the three Services, but also in the Coast Guard, para-military forces and intelligence agencies. Consequently, there are demands for additional aviation assets and personnel, as well as instances of territorial overlap and even conflict between operators.

In India, unfortunately, this along with other issues related to national security have been treated as 'holy cows'. A mixture of inertia, ignorance and indifference has kept the politicians, bureaucrats and even the military leadership from addressing thorny inter-Service issues. A brief glimpse of how other nations and their militaries approach such matters would be useful.

How Other Countries Cope?

In the US, traditional dividing lines of responsibility between the army and navy, whereby one operated over land and the other at sea, were demolished by the advent of military aviation. The lines became further blurred in WW II when both the US Army and Navy deployed aviation wings for support of their operations. In 1947, the US Congress enacted the National Security Act of 1947, which attempted to address lessons learnt during the war; unifying the armed forces, and at the same time, creating the US Air Force as an independent military service.

However, many overlaps emerged, and noting the omission regarding 'roles and missions' in the Act, a Presidential Executive Order was issued, which assigned responsibilities; (a) to the US Navy for control of the sea and the air above it and (b) to the US Air Force for combat in the air, including strategic bombardment, airlift, and tactical support of ground and naval forces. However, the US Navy objected, because if missions were defined in terms of medium of operation (land, sea, air), it constituted a threat to naval aviation.

Seeing the necessity of addressing the contentious issue of roles and missions, in March 1948, the US Secretary of Defense sat down with the service Chiefs, and, together, they hammered out a new set of roles and missions which satisfied all. Subsequently, these were enshrined in Title 10 of the "US Code of Federal Laws" which remains the legal basis for Service roles and missions. In India, all that we have are the three Service Acts which deal with discipline, punishments and ceremonial etc. There are also Rules of Business of the Government of India – but they contain no mention of any military functionary.

The question that begs an answer today, in India, is this; how is air power to be deployed or shared to fulfill the vital operational needs of the army, navy and air force? It is only when one looks at changes taking place word-wide that one realizes the time-warp that our armed forces are stuck in.

UK, for example, undertook a Strategic Defence Review (SDR) 1998, with the objective of enhancing operational effectiveness, cutting costs and eliminating duplication. One of the major outcomes was a directive to the British armed forces to pool their helicopter assets to form the *Joint Helicopter Command* (JHC). With nearly 300 helicopters flown and maintained by tri-Service crews, the JHC is commanded, in rotation, by two-star officers of the three services. Similarly a *Joint Force Harrier* was created with RAF and RN assets and crews. Both organizations saw successful operational deployments in Iraq and Afghanistan.

Unfortunately India suffers from a twin handicap in the national security context. While most of our elected representatives have little interest in security matters, our over-worked and under-staffed MoD lacks the expertise, time and inclination to involve themselves in undertaking reviews or evaluation of security structures and doctrines. The option of constituting independent 'expert committees' has never received consideration by the MoD.

A deliberate exercise like a SDR or a White Paper would help visualize the kind of armed forces the country needs, and pinpoint the specific capabilities they need to field. In India we undertake no such introspection, and continue to indulge in wasteful expenditure because we have failed to integrate our armed forces. We are also stuck with inefficient and dysfunctional structures for management of defence which will let us down in war. There are many models available, world-wide, to emulate, and we could also evolve our own. Just to illustrate the principle, on which they work, let us, once again, look outwards.

The US Model

If we revert to the US model, where true jointmanship dawned over 30 years ago, with the Goldwater-Nichols Act of Congress, we find that change was ushered-in by a pro-active set of politicians. The Department of Defence is headed by a cabinet minister designated Secretary of Defence, who is assisted by three junior ministers, one for each Service, and the Chairman of the Joint Chiefs of Staff (CJCS); the equivalent of CDS. The CJCS is the designated principal military adviser to the President and reports to him through the Secretary of Defence.

Theatre commands, known as Unified Combatant Commands, are organized either on a geographical or a functional basis, and headed by a General or Admiral, whose operational chain of command runs through the CJCS, and Secretary of Defence to the President of the USA. The Chief of Staff of a Service, on the other hand, is an administrative position, held by the senior-most uniformed officer in the Service, who bears no operational responsibility.

Now compare this with the system followed by India. The three Service Chiefs have, since independence, continued to wear two hats; a 'staff hat' as the Chief of Staff and an 'operational hat' as the Commander-in-Chief of his force. One of them also functions, part-time, as rotational Chairman COSC responsible for the nuclear deterrent. Such anachronisms do not exist in any other modern military.

In the US system the whole world is covered by just nine theatre commands, with components of the army, navy and air force available to the Commander to deploy operationally. By way of contrast; India has, mindlessly, created 19 commands; of which 17 are single Service and, amazingly, no two of them are in the same location!

In sum; both a CDS and theatre commands are vital for the enforcement of Jointness and effective operational deployment of modern military forces. However, since we have remained trapped in a time-warp for 69 years, drastic change could disorient and destabilize. A practical half-way house would be the institution of an empowered, permanent Chairman COSC who would prepare the roadmap for change. For this measure to succeed it, must be accompanied by professionalization of the Ministry of Defence through the substantive induction of uniformed personnel.

Our ANC Experiment

In closing, it would be pertinent to make brief mention of the bold experiment that we undertook in 2001; the joint Andaman & Nicobar Command (ANC). From a 150 man naval garrison in 1962, to Fortress A&N in 1976, and then through the GoI directive of 1st October 2001, to a full-fledged Joint Command, this formation travelled a long way in four decades. Along with it, the Indian armed forces too, took a great leap of faith when they placed all forces located in the A&N Islands, including the Coast Guard, under the command of the newly created C-in-C Andaman & Nicobar (CINCAN).

Although CINCAN reports to the Chairman COSC, a certain amount of duality in control was retained. Operational matters and routine issues relating to budget, works and personnel are referred to the IDS HQs, while a linkage is also maintained with the parent Service HQs through the unique Component Commanders, for manpower requirements and maintenance of assets. While HQ IDS has provided sound support, individual service backing for ANC has remained inconsistent.

As the first CINCAN, I may be biased, but to my mind, the ANC, as an experiment in Jointmanship, was an unqualified success. Confirmation was provided during the 2004 tsunami relief operations when the well oiled and efficient joint-machinery of the ANC, under the direction of a professionally outstanding Lieutenant-General, came to the assistance of the civil administration, and the people of these islands.

The seed of jointmanship planted in Port Blair in 2001 is now a sturdy 15 year old sapling, whose shoots could have been transplanted in a Theatre Command anywhere else. However, it appears that the sapling itself is may be withering. Reports indicate that Service HQs have become lukewarm in their support and attitude to ANC. There is word that the navy is keen that it should revert to the status of a maritime command. It would be a retrograde step if India's pioneering experiment in 'Jointness' is allowed to fade away through parochialism, myopia or indifference.

Conclusion

Air and space power is going to be the arbiter of future conflict. The challenge will lie in exploiting it jointly and wisely, in order to maximize national security. Some questions about roles and missions hang in the air today. Should the attainment of air dominance be an end in itself, which replaces military and maritime strategies? Or should air and space power be seen as a powerful instrumentality to gain operational objectives on land, sea and air?

Armed forces across the world, realized long ago that for reasons of economy, efficiency, and combat-effectiveness, no single Service would be able to undertake operations on its own in the future. This has been clearly demonstrated by US forces in Iraq and Afghanistan. However, each country has its own compulsions, and a unique environment to manage, which is possibly why the Indian armed forces have so far baulked at jointmanship. The Indian state is obviously prepared to allocate enormous sums of money to national security, but lacks the political will to ensure that it is spent effectively.

Until our political leadership decides to intervene, it should be incumbent for the Service HQs and the Integrated Defence Staff to apply themselves seriously to doctrinal and strategic issues. For example, they could work on concepts for the conduct of the joint 'Air-Land Battle in the Mountains' or 'Air-Sea Operations in the IOR'. The numerous Service institutions of higher-learning and think-tanks like CASS could be mobilized for such intellectual endeavours.

Perhaps then we may be able to harness inter-Service synergies, instead of squabbling over hardware.

Admiral Arun Prakash (Retd)

Admiral Arun Prakash retired as India's 20th naval Chief and Chairman Chiefs of Staff in end-2006.

A naval-aviator by specialization, he commanded a carrier-borne fighter-squadron and four warships including the aircraft-carrier Viraat. In flag-rank he commanded the Eastern Fleet, the National Defence Academy, the Andaman & Nicobar Joint Command and the Western Naval Command. He headed the Aviation and Personnel branches of the navy and was Vice-Chief before taking over as CNS in 2004.

A graduate of the IAF Test Pilots School, the Defence Services Staff College and the US Naval War College, post-retirement he was Chairman of the National Maritime Foundation and served two-terms on the National Security Advisory Board.

Target Baluchistan?

Air Marshal Anil Trikha (Retd)

In his Independence Day speech from the ramparts of Red Fort, Prime Minister Modi thanked the people of Gilgit, POK and Baluchistan for their 'thanking and acknowledging him'. The platform chosen by him was significant because it is from there that the PM articulates not only his Govt.'s plans and programmes but also its thinking on various important issues engaging its attention. Clearly it is not an occasion for some casual off the cuff remarks. Much thinking goes on behind the scenes because the world at large is attentive to the minutest nuance to detect straws in the wind. That being so, PM's reference marked a significant departure from the past. Hitherto Indian Govt. had been a committed votary of the principle that internal affairs of a country were its own business and that no outside power had any locus standi on the matter. It was on this basis that it had steadfastly refused Pakistan any role in its Kashmir affairs. Considering that India had never contested the notion that Baluchistan was a part of Pakistan, the statement implied a clear departure from its past position. India has also been a strong supporter of the idea that violence in pursuit of an objective – no matter how legitimate- can not be condoned. Baluchistan is wracked by violence. Pakistani state is undoubtedly the principal perpetrator but Baluch insurgents fighting to change the status quo are also resorting to violence in pursuit of their objectives.

India's position of principle accorded with lofty ideals that should underpin conduct of nations for the sake of a stable international order. It also helped to defend its own position in the face of challenges arising from multiple

---

ISSN 2347-9191 print

CASS Journal, Vol. 3, No. 4, October–December 2016, pp. 25–34

insurgencies in its own backyard. Departure from those long held positions is likely to incur some cost in terms of its image of innocence. That is not to say that states sacrifices their vital interests merely to protect a shining image. In a world of realpolitik, it is protection and advancement of national interest that governs policy choices. Therefore it is relevant to examine if choice to dilute our long held principles measures true on that yardstick.

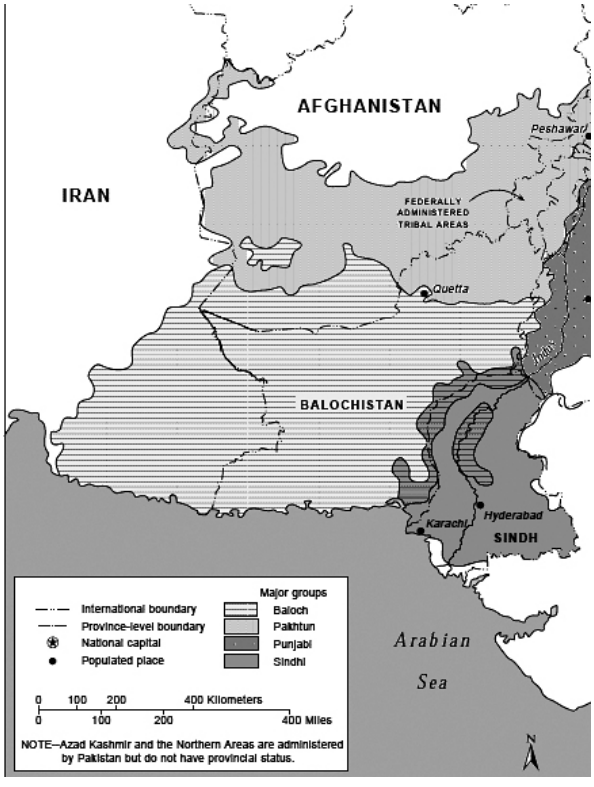
Irrespective of the spin that Pundits may try to put on the Prime Minister's statement, circumstantial evidence tends to suggest that this change of track is part of Govt.'s response to events in the valley following the death of Hizbul commander Burhan Wani. India has been chafing for a long time at Pakistan's direct and relentless sponsorship of insurgency in Kashmir. Violent upsurge that followed Wani's death is interpreted as part of Pakistan's continuing conspiracy to undermine and destabilize India. Lately Pakistan had also started a concerted campaign in international fora to bring opprobrium to India for its alleged abuse of human rights. Notwithstanding the likelihood that Pakistan's efforts would get no traction in the international community, (because of its own complicity in using terrorism as a tool of its statecraft), it nevertheless provokes India to respond robustly. However it would be simplistic to assume that Govt. has chosen to respond to Pakistan's ill judged strategy to badmouth India's record in Kashmir by highlighting the latter's own record in Baluchistan. That much by itself gives India no tangible benefit. More likely, it was to put Pakistan on notice that India intends to respond to its actions in Kashmir in a like manner in Baluchistan. This conclusion is of a piece with the current Govt.'s instinct to adopt a more muscular approach in dealing with Pakistan. Raksha Mantri's orders to forward deployed forces to retaliate vigorously in response to any provocation on the border, NSA's propounded doctrine of defensive – offence to exploit Pakistan's internal vulnerabilities[1] and statements of various functionaries (of both the party as well as the Govt.) lend credence to the belief that having tried and failed in the soft approach of personal diplomacy with Nawaz Sharif, the Govt. now plans to unleash the NSA's doctrine of offensive – defence, to pay Pakistan back in the same coin as what it is doing to us in Kashmir. It is common wisdom that rhetoric without intent or ability to execute threat erodes credibility. Therefore it may be appropriate to evaluate India's capacity to deliver on its threat.

---

1 Ajit Doval's speech at the 10th Nani Palkhivala Memorial Lecture at the SASTRA University in Feburary 2014.http://www.dailymotion.com/video/x2njwui

Nature of Baloch Insurgency

Baluch are a distinct ethnicity with their own language, culture, customs and historical memory. Currently they are split among the Iranian province of Sistan & Baluchistan, Pakistani province of Baluchistan and a small area of Afghanistan. Geographically, Pakistani Baluchistan is its largest province, occupying 44% of the country's total area. It is also the least inhabited, with only 5% of total population. With abundant quantities of natural gas, oil, coal, copper, and gold it is richly endowed with natural resources. However despite this abundance, it is the least developed region of Pakistan and figures at the bottom in all indices of human development.



http://www.globalsecurity.org/military/world/pakistan/images/map-ethnic-1.gif

Ever since its absorption in Pakistan, history of Baluchistan has been peppered with uprisings of restive tribes against the rule from Islamabad, government reprisals and lately with violence unleashed by various Islamist groups. At the time of sub-division of the subcontinent in 1947, Kalat a major component in what is today Baluchistan, was already an independent state in a special treaty relationship with the British Empire. It had its own legislature, which rejected any suggestion of forfeiting its independence under any pretext. After departure of the British, when the Khan of Kalat hesitated to accede to Pakistan, the latter sent in troops to seal its fate. Finally after flying its flag for 227 days, on

27th March 1948, it got swallowed by Pakistan. While the Khan signed treaty of accession to end his state's independent status, his younger siblings declared independence and fled to Afghanistan to seek aid. The rebellion continued until 1950.

There were a further three insurgencies in the region in 1958–1959, 1962–1963 and 1973–1977. In 1958 when Nawab Nauroz Khan Zarakzai rose up in revolt and announced his intention to secede, Pakistan retaliated by declaring martial law, bombed Baloch villages and deployed tanks and artillery to quell the rebellion. Nauroz was arrested and died in prison, while his family members were hanged for treason. In 1973, 10000 strong force led by Marxist 'Baloch People's Liberation Front' and Balochi Students' Organization confronted Pak army with another rebellion. Pakistan again counterattacked with deadly force killing tens of thousands of civilians, including some 5000 insurgents. More than 3000 troops. were also consumed.

Notwithstanding Baloch's consistent demand for greater autonomy and share in their natural wealth remaining largely unfulfilled, token participation in political process led to a period of uneasy peace for nearly two decades. Return of military rule in 1999, coupled with increasing flow of migrants from conflict ridden Afghanistan ended that period of relative calm. Tension mounted as military began to widen its footprint by creating new establishments in the region. Fearful of losing their identity and tightening federal control through expansion of military forces, Baloch became increasingly rebellious. As is its wont, Pak army mounted a ruthless campaign to suppress the sporadic eruption of challenge to state authority. Use of airpower against civilian population forced thousands of tribesmen to flee their homes. Phase 1 of construction of Gwadar port with Chinese support had begun in 2002. In 2004 an insurgent attack on Gwadar port killed three Chinese engineers and wounded four more. Project Gwadar and military establishments were symbolic of the servitude that Balochs felt as being forced into. Hence the rebellion intensified and armed clashes multiplied. In Aug 2006, Nawab Akbar Khan Bugti, a prominent tribal leader was killed at the hands of the army in a deadly encounter. At least 60 Pakistani soldiers and 7 officers also lost their lives. Military government in Islamabad had accused Bugti of a series of deadly bomb blasts and a rocket attack on President Pervez Musharraf.

It has been more than 10 years since the death of Nawab Akbar Khan Bugti. Ripples touched off by that watershed event — which turned a prominent tribal leader seen as pro-establishment for much of his life into a nationalist icon —

continue to roil the province even today. On the day of his death anniversary, all Baloch dominated areas in Baluchistan witnessed a complete strike. Even Quetta, a Pakhtun-majority garrison town with a mixed population of different ethnicities, came to a standstill. Baloch resistance now appears to have greater depth and breadth covering the entire province. From rural mountainous regions to city centers, protesters (including women and children) are keeping alive the issue of the tragic plight of Baloch people..

Although wide spread, nationalist movement in Baluchistan yet remains highly fractured. Marri, Bugti, and Mengal are three largest tribal groups in Baluchistan. Leaders from these tribes are capable of assembling sizeable armed followers but competing motivations and interests have denied their movement a unitary character in its goals and tactics.

Indo Pak Spat

It has been a constant refrain of Pakistani establishment that India is supporting terrorist groups in Baluchistan and elsewhere to destabilize Pakistan. However its endless whining has received no attention from the international community. Even after netting KulbhushanYadav, whom it paraded as an Indian RAW saboteur, body of evidence of Indian activities is so weak that international community pays little heed to Pak allegations. In the past it had got some wind in its sails when in July 2009 Pakistan's Prime Minister Yousaf Raza Gilani succeeded in having its concern about terrorist activities in Baluchistan included in the joint statement issued at the end of his meeting with Dr. Manmohan Singh at Sharm el-Sheikh. It was the first and only occasion when Pakistan's concern about Baluchistan managed to slip in a joint India Pak communiqué. Emboldened by its success, Pakistan tried to rope in United States to intercede on its behalf. However Obama administration's Af-Pak special envoy Richard Holbrooke told Washington's foreign press corps soon afterwards that Pakistan had failed to produce any credible evidence in support of its allegations[2]. Sharm el-Sheikh was a diplomatic faux pas which weakened to an extent India's deniability of its role in Pakistan's internal affairs. However in overall terms, till date Pakistan has not been able to present a convincing case of Indian involvement in its troubles in Baluchistan. Having been less than successful on that front does not mean that Pakistan will abandon using

2 US bails out India from Balochistan wrangle, Chidanand Rajghatta, TNN Jul 31, 2009 http://articles.economictimes.indiatimes.com/2009-07-31/news/28482721_1_india-and-pakistan-balochistan-af-pak-envoy-richard-holbrooke

Sharm el-Sheikh or 'Kulbhushan' stick to embarrass India on every available opportunity. As a tit for tat it would also try to eke out some legitimacy for its own role in supporting the insurgents in Kashmir.

Iran and Baluchistan

West Baluchistan was annexed by Reza Shah Pahalvi in 1928. The area retained its name i.e. Baluchistan for a few years before it was changed to Baluchistan and Sistan. Today it is called Sistan and Baluchistan. Although the province of Sistan and Baluchistan (like Pak Baluchistan) holds vast amounts of natural resources including gas, gold, copper, oil and uranium, Baloch in Iran remain one of the poorest and most deprived people. They have the lowest per capita income and like in Pakistan the worst indicators in "life expectancy, adult literacy, primary school enrolment, access to clean water and sanitation, and infant and child mortality". Shia Iran has a Persian ethnic majority. Baloch count amongst its many minorities. They speak Baluchi and are of Sunni Islam persuasion. Because of religious and racial differences, they have long suffered at the hands of successive Shia regimes in Iran. Lack of development, coupled with cultural and religious repression has fueled armed insurgency in the province. In retaliation, Iranian security forces have responded brutally. Several Baloch tribes and many families are divided by the Iran – Pakistan border. Anger and frustration of Iran's Baluch minority are reflected in the broader struggle of their co-ethnics in Pakistan's Baluchistan area. Space created by grievances regarding economic deprivation, religious persecution and political marginalization has been filled by a variety of terrorist groups pedaling drugs and killing mercilessly in the name of religion. Iran shares 1165 Km of porous border with Pakistan's Baluch province. Nature of terrain and sparseness of population facilitates easy infiltration and exfiltration from one side to the other. Taking advantage, terrorists from Pakistan frequently target Shia population and security forces across the border.

Iran does not want to yield any space for Baloch sub- nationalism to take root. So long as it could act in concert with Pakistani authorities to curb Baloch restiveness, it did. However since the Iranian revolution, cleavage between Shia Iran and Sunni world has been widening. Pakistan identifies itself with the Saudi led Sunni block and therefore accusations about Pakistan's support to terrorism fly thick and fast. Having arrested Kulbhushan Jadhav in Baluchistan, Pakistan tried to sell story of India's hand in fomenting unrest in Baluchistan to the visiting President Rouhani in March 2016. Very politely but curtly and in

a snub to his hosts, the President sidestepped from endorsing Pak allegations. That said, Iran has invested heavily in completing its portion of the gas pipe line project which is to run through Baluchistan on the Pakistani side. Therefore stability in Baluchistan is vital both to contain Baloch restiveness in its own backyard as also for its commercial interests. Therefore Iran will not tolerate any agency fanning flames of Baloch unrest.

Chinese Interests

China perceives Baluchistan as a vital cog in its strategic ambitions. Gwadar when fully developed would provide PLA Navy foothold to monitor an area of vital strategic interest. Gwadar is also the core element in the 'China Pakistan Economic Corridor' (CPEC) being designed to link land-locked westernmost province of China (Xinjiang) with a warm water port in the Arabian Sea. The link when operational would enable China not only to drastically reduce the length of its energy pipe line from the Persian Gulf and regions to its West but also enable it to circumvent Malacca Straits and maritime routes through South China Sea, vulnerable to interdiction by the US or other hostile regional powers

Thus from the Chinese perspective CPEC is a flagship project in which it has a vital stake. Therefore it is unlikely to brook any interference from any quarter. India has voiced objections because the route is carved through a part of Kashmir which is under illegal occupation by Pakistan. However Chinese have brushed aside Indian protests with disdain. Baloch view it as an Islamabad crafted project with preponderance of dominant Panjabi interest, The feeling of being exploited has manifested in a series of attacks on agencies involved in its execution including Chinese engineers and other support staff By encouraging Baloch activism against the CPEC project, Indians would be seen as throwing a spanner in Chinese works. Should this perception take hold, Chinese are bound to react strongly by ramping up pressure elsewhere.

Options and Likely Consequences

There is no denying that Baluchistan is a deeply troubled province of Pakistan. Overlap of a variety of historical and contemporary social, economic and cultural reasons have alienated Baloch people deeply from Pakistan's national mainstream. Historically the problem stems from Pakistan's effort to subsume Baloch ethnic identity by mass migration of outsiders and by attempting to overlay a homogenizing religious identity on all Pakistanis. Baluch also feel

aggrieved for being exploited for their natural resources by Panjabi dominated federal elite. To vent their frustration, they resort to frequent attacks on Pak military and its installations. Pakistan army and paramilitary forces respond ferociously in kind to suppress the roots of Baloch nationalism. Thousands of Baloch are alleged to have been abducted, tortured and killed. The situation is complicated further by emergence of a number of extremist religious groups which carry out violent attacks to advance their own agendas. Afghanistan the most abundant source of opium, shares a long, desolate border with Baluchistan. The extended Makran coastline and limited law-enforcement capacity on both sides of the border makes Baluchistan the ideal supply route for transit of narcotics to consumers worldwide. Pernicious influence of narco- economy further adds to the toxic brew created by a host of other factors.

While Baloch nationalism has the aura of a cause célèbre, the fact remains that Baluchistan is home to a number of disparate tribes devoid of a strong bonding motivation to spawn a truly strong national movement. Thus far they have not demonstrated capacity to control territory in contestation with Pakistan. While there have been calls for an independent Baluchistan from time to time, the movement has failed to find any real traction to be taken seriously. In late August 2016, Baloch separatist leader Brahamdagh Khan Bugti (leader of the outlawed Baluch Republican Party) has in fact offered to enter into a political dialogue with the Pakistani Government to reach accommodation on Baloch demands[3].

As a means to pacify the restive Baloch, Pak military has been gradually increasing its footprint in the region. Government claims that CPEC and concomitant development of Gwadar port would provide strong impetus to development of Baluchistan. However local population fearful of being overwhelmed by outsiders, views it as exploitation and therefore sporadic attacks to stall the project continue. Army has declared its commitment to protect the project at all costs and hence regular clashes have become a feature of the landscape.

Under the circumstance what policy options can India exercise? Considering that Baluchistan is removed from India by hundreds of miles of Pakistan territory, direct armed intervention a la Bangladesh is ruled out. We could conceivably raise the temperature by rendering covert support to insurgents with the intent to inflict greater pain on Pak military. But that is unlikely to strengthen India's leverage to force Pakistan to rethink its strategy vis. a vis. India. On the other

3 http://www.dawn.com/news/1280501

hand escalatory steps is what Pak army may just be looking for to entrench itself even further in Pakistan's power structure. That outcome also does not promote our interests in any way? Sober consideration of NSA's implied threat to force separation of Baluchistan from Pakistan would suggest that it is not a realistic option. Neither constellation of international forces is conducive to such an outcome nor does India have the capacity to deliver on that threat.

There can not be any doubt that Pakistan must be held accountable for its many outrageous acts against the Indian state. Passivity in the face of grave provocation serves only to feed its predilection to do more of the same. The challenge is to orchestrate our military, political and diplomatic resources to compel Pakistan to refrain from using sub-conventional strategies to undermine our security. That is a serious proposition and calls for a sober assessment of the clubs in our bag and a more nuanced plan of action. Public posturing can hardly be a substitute for capacity building to counter threats from across the border.

Air Marshal Anil Trikha (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.

Occident to Orient: Mission in the Ocean

Adv Abhijit Bhattacharyya

While turning the pages of human history in and around oceans and seas of the world map, what stood out stark is that, Mediterranean Sea (perhaps) is the main and most important of all world water bodies to have been witness to, and theatre of, maximum naval battles and most number of belligerents spilling blood in saline water. In fact such has been the velocity of violence over centuries in the "landlocked" Mediterranean Sea that the bigger Pacific, Atlantic and the Indian Oceans pale much behind that "water-body", notwithstanding its being the small, sole sea, bridging the three continents of Africa, Asia and Europe. Strange! No, not really.

Delving deeper, it transpired that Mediterranean Sea could be referred to as one of the foremost and frequently happening places which laid the pioneering foundation of at least two of the three conventional types of naval warfare which have evolved over centuries. Unsurprisingly, therefore, of the three naval "war heads": decisive battle and blockade (siege) appear to be the prime gift of the early men of mayhem in the Mediterranean Sea to the military men and machines of the globe.

It, therefore, had to come as a logical and landmark 480 BC "decisive" naval battle in the Mediterranean Sea, between the Greek city states led by Themistocles and the Persians captained by their king Xerxes. When the result of the naval battle went spectacularly in favour of the outnumbered Greeks in the straits between the mainland and Salamis, an island in the Saronic Gulf near Athens, history was created as one of the "decisive battles" had arrived in naval war over the Mediterranean Sea water.

ISSN 2347-9191 print

CASS Journal, Vol. 3, No. 4, October–December 2016, pp. 35–48

Mediterranean Sea, or the extension thereof (one can say with reasonable degree of confidence), again saw in 677/678 AD the first Arab siege/blockade of Constantinople (as it was then known, because Constantinople became Istanbul only after 1453 AD with the fall of the Eastern Roman Empire, also known as Byzantine Empire, at the hands of the Ottoman Turks). However, the Arab blockade of Constantinople ended in failure as Byzantines emerged victorious.

Regarding the third type of naval warfare, fleet-in-being, denoting a naval force, which plays a controlling role without ever leaving port, Mediterranean Sea again had its numerous unfolding drama in hundreds of decisive battles as well as fleet-in-being, built-up over centuries. The fleet-in-being is the weapon of the weak, as every naval battle, before or after, would have the strong and the weak emerging in the arena as every war would have a victor and also a vanquished.

In the Asian theatre, perhaps the best instance of "decisive battle" can be exemplified by the three victories of Vietnamese Navy in 938, 981 and 1288 AD respectively. Indeed, accidentally or coincidentally, unlike the three battles of Panipat on Indian soil, in 1526, 1556 and 1761 AD, in which the sons of the soil were invariably routed by foreign invaders, in the case of Vietnam it was the opposite; three consecutive victories thereof, all the way, against foreign navies. Thus whereas in 938 AD the Vietnamese defeated the Southern Han fleet in the first battle of Bach Dang river, and in 981 AD they again crushed the Chinese Song forces in the second battle of Bach Dang, in the third battle of Bach Dang in 1288 AD they defeated the Mongol armada (imagine Mongols of all people! Those, known to be confined to a remote, cold, arid, desert type landlocked terrain of steppe in North-eastern Asia, coming all the way down near today's South China Sea!) thereby establishing Vietnam as dour defenders in the water. And that certainly was no mean an achievement.

From Mediterranean Sea to South China Sea to India, how and in what way does the scenario change? What does Indian history, an history of hundreds of years of subjugation, have to show and teach the contemporary generation of 1.20 billion heads of Indian geography? It is time to analyse; all the more because the forgotten aspect of the geography of Indian history shows that despite being unequivocally referred to as a land of sea and snow, the latter, much more than the former, played deeper in the psyche of the people, both scholars and subjects, of the continent of India. The description

of India vide Vishnu Purana, II, 3.1 stands out:

"Uttaram yat samudrasya
Himadreschaiva dakshinam,
Varsham tad Bharatam nama
Bharati yatra santatih"

"The country that lies north of the sea and south of the snowy capped mountains is called Bharata; there dwell the descendants of Bharata".

Despite such vivid description of the sea in history of the Indian continent, a long 4104 nautical mile coast line and a tradition of a flourishing mercantile marine, somehow the authentic, recorded chronology of India as water power is woefully lacking. Detailed description of India's water-story began only with the 16th century arrival of European traders in the coastline thereof. Unsurprisingly this happened principally because of the robust naval actions which took place between rival European trading nations with only sporadic Indian participation. Thus on February 03, 1509 the Portugal's Indian viceroy defeated a combined Egyptian-Gujarat Sultan fleet off Gujarat for controlling spice trade. More than hundred years later, however, in November 1612, and in December 1620, British East India Company fleet defeated Portuguese navy near Surat and at Cape Jask. Portuguese fleet were to be defeated by the Dutch too in 1622 near Goa coast. In the latter half of the 17th century, the Dutch-Portuguese naval rivalry shifted to Sri Lanka where the Portuguese faced defeat twice in a span of two months in 1654.

The fighting of, and between, European navies in Indian waters continued unabated with negligible participation and presence of any Indian Raja or Maharaja, Badshah or Sultan, in the vicinity of the theatre of the white man's battle in the land of the coloured people. Thus in 1690 took place the fight between French and British near (the then) Madras, and in 1758 the English fleet again defeated the French first in Cuddalore (April 1758) and then Nagapatinam (August 1758). In between, however, did surface some local initiative in 1713, near Cheul, and 1718 near Karwar when the Portuguese faced stiff naval challenge from indigenous coastal rulers, but the final result of which went in favour of the Portuguese.

A virtual pattern emerged; Nagapatinam, Madras, Trincomalee (modern Sri Lanka) and Cuddalore became frequent and familiar venue of European naval rivalry throughout the 18th century. From the last decade of the

18th century to the middle of the 19th century, however, Mauritius and Mozambique became the additional favourite arena for Anglo-French naval rivalry and their quest for trade and terrain supremacy thereby giving signal to the littoral states of the Indian Ocean of the possible unfolding maritime scenario of the future.

In Asia, beyond the Indian shore line too, virtually the whole of the second half of the 19th century and beyond could be seen as the age of rapacious and naked aggressions of the western naval forces in Chinese ports dotted around its eastern sea board. Thus whereas the English took Hong Kong, the Portuguese took Macao and the sailors of Germany and France too made merry at the expense of 19th century west-injected drug-addict Chinese populace. The French annihilated the Chinese at Foochow in August 1884 and attacked Chinese ships February 1885. Clearly, superior sea power, coupled with greed, of the west made protection of life, liberty, property and prosperity of the east difficult.

The flip side of the Indian story, however, is that, as long as India remained subject under British masters, it did not have to either bother or worry about naval security or attack from outside owing to the iron-clad shield provided by the world's strongest, the Royal Navy. Not surprisingly, therefore, both the World Wars of the 20th century virtually bypassed the Indian shore, sailor and ship as hardly any serious naval action took place in the vicinity. Also, Navy being the pride of the English crown, flying Union Jack across the global waters, there was absolutely no place for any Indian in the captain's cabin of the Royal fleet. This lack of conspicuous naval tradition and operational experience mercifully, however, did not adversely affect or afflict the leaders of new India. In fact they were quick to grasp the issue to realise the importance of the "sea power of the state". In reality, perhaps the early wars of 1947-1948 waged by the new western neighbour also must have had something to do with this.

Indeed, the conscious, but belated, attempt by new rulers to initiate the rise of Indian state as a "sea state" of the 21st century Indian Ocean is as spectacular and surprising a story to the traditional western maritime and naval powers, as is possible, or can be thought of. India! Can India really be a "maritime and naval power"? After being subjugated for centuries? Hard to visualise. And even harder to accept. Even today. Some people thought.

That point later. Before that, one has to comprehend the state of the sea and the states of the sea, especially the Indian Ocean. Six African (South

Africa, Mozambique, Tanzania, Kenya, Somalia, Djibouti); twelve Asian (Yemen, Oman, UAE, Iran, Pakistan, India, Sri Lanka, Bangladesh, Burma, Thailand, Malaysia, Indonesia), and Australia complete the list of 19 Indian Ocean littoral states. Further, several island nations of Madagascar, Maldives and Mauritius make a total of 22 states connected to the Indian Ocean.

Although today the position of India's naval arm appears reasonably steady and solid owing to its geography, demography and economics amongst Indian Ocean rim states, yet the same India did not figure anywhere in the world almanac of international force-assessment and political analysis even after winning an unprecedented December 1971 war in South Asia. Why? Because early 1970s was still dominated by the navies of the west, supplemented and supported by the heightened Cold War arms race with its in-built tension-creating apparatus across global hot spots. Royal Navy was downhill and the US fleet upswing. 28 aircraft carriers of Washington DC was ruling the global waves against a total of 17 carriers operated by nine navies of Argentina (1); Australia (2); Brazil (1); France (3); India (1); Italy (1); Spain(1); UK (5); USSR (2). Yet the Red Navy of Moscow under Admiral Sergey Georgiyevich Gorshkov was on hot pursuit; trying to close gaps with USA with a doctrine of "US carrier versus Soviet submarine" (underwater quantity of Moscow versus surface quality of DC), one of the perennial tug-of-war doctrines between naval experts; force projection by surface combatants or fire power of submarines from under the surface?

In this context, it would be pertinent to note as to how the Super Power rivalry was perceived by the then US president Nixon in the 1970s:-"I..... will assure the supremacy of the US naval power" because "what the USSR needs in terms of military preparedness is different from what we need. They are a land power, primarily, with a great potential enemy on the East. We are primarily, of course, a sea power, and our needs, therefore, are different". It was the post-Second World War era and US global presence through the navy was the aim and strategy. It had to be number one. The best of the rest at best could take any slot except the top one. USA, being the "ruler", understandably was wary of all potential rival(s) challenging the "ruler".

India, however, somehow managed to come out unscathed from the cold war tension. Thanks to much-maligned non-aligned, political neutrality of New Delhi in its formative years. Slowly and steadily navy of India started growing thereby attracting somewhat adverse reactions from the west beginning 1980s, as Soviet ships and submarines filled the inventory of New

Delhi Navy. Also a modest start-up/ indigenous ship building industry soon made considerable progress which in turn invited caustic remarks from the critics terming in some quarters as "Indian sea state" in the making.

It started with benign contempt in mid-1970s. While depicting global scenario, assessment of Indian naval policy, plan and position was concluded in two lines stipulating that New Delhi was trying to acquire assets from both London and Moscow. In late 1970s, however, it was somewhat grudgingly acknowledged that "India, meanwhile, is building a solid, competent naval force. Destroyers, frigates, minesweepers and amphibious craft from the USSR are melded with British-designed 'Leanders' and will, in the future, join Indian-built frigates and submarines. There is little doubt that the Indian Navy is set for maritime supremacy in this area (ie the Indian Ocean and the Tasman Sea)".

As Soviet-Afghan war began to intensify from the beginning of 1980s, in the drug-lord, warlord infested-terrain of Afghanistan, cold war radiated through the supply of weapons to the allies of two super powers. Thus it came as little surprise to learn that when 32 navies used Soviet ships, USA equipped 38 nations with its vessels. In fact it will not be wrong to suggest that it is the decade of 1980s which saw the rise and rise of the modern, and modernised, Indian Navy with induction of two German HDW (both 1986) and six Soviet Kilo submarines (1986 to 1989); one aircraft carrier (1987); five Soviet Kashin class destroyers (1980 to 1988); two Leander class frigates (1980 and 1981); three Godavari class frigates (1983 to 1988) and several smaller frigates, corvettes and several types of fast attack craft. It was also the 1980s which saw spurt of indigenous surface ship building projects thereby leading to healthy booking order for Mazagon Dock Mumbai and Garden Reach Shipbuilders Kolkata which ultimately led the west to ask questions to Indian authorities as to what the intention of New Delhi is.

Unfortunately, the same west, in the past, never asked questions to much smaller nation states of the Occident as to where was the need and necessity for them to resort to hectic naval activity leading to their blue water capability even after the end of the era of western imperialism and empire building of the 19th century? Understandably, therefore, severe criticism, bordering on paranoia, (perhaps hostility) began in 1984 with the firing of first salvo of semantics: "Those going east-about will very soon be passing through an area which provides much reason for debate. Indian ministers have spoken of the menace of Pakistani aggression, without identifying either the reason

or the means behind such an action. Pakistan has a growth rate of over 6% on her GDP and a falling inflation rate. Her armed forces represent a smaller proportion of her population than most European countries while her navy is barely adequate for protection of her trade within coastal waters. These facts, combined with the annual bill of some $ 200 million for support of the refugees from Soviet-occupied Afghanistan, do not readily prove an aggressive intent. If Pakistan were to be the invader, possessing an army less than half the size of that of India and an air force with a third of the Indian line-up of aircraft, they would need incredible luck or some form of divine intervention to achieve success. With this background - one is forced to speculate whether these protestations of danger are designed to deflect people's attention from the astonishing build-up now in progress".

How time flies! That was a western assessment made 32 years ago. One wishes to ask a simple question to the author of 1984: how will he assess the European situation today, 2016, in light of the "invasion/infiltration of refugees" from Asia and Africa? What sort of "grave security threat" are they posing (and why) to Europe to go paranoia against a particular religion? Why is Europe leaning to extreme right-wing politics somewhat akin to that of the pre-Second World War era? Why is Europe trying to persuade its member states the urgent need to enhance its collective defence budget and upgrade the security of the club of 27 nation states? What an irony? If India, after hundreds of years of subjugation under foreigners, strengthens its navy it becomes an act not commensurate with threat perception. And if west continues doing what it did in the past there is unlikely to be any question for it? Two sets of ethics for the two? Occident and Orient? Even in the 21st century?

In hindsight one is compelled to recall now that as a professional, one hardly understood the then Indian Prime Minister's oft-quoted words "foreign hand" trying to destabilise India post-Indo-Paki war of 1971. In fact, one today gets a sneaky feeling that perhaps the Indian PM's statement was not quite untrue! Why? The following words emanating from widely used open source information of mid-1980s would suffice. Titled "Pakistan, India and their neighbours", the "objectivity", or the lack of it, appears quite amazing, to say the least. "In this area there appears to be an imbalance between rhetoric and facts. The navy of Pakistan lists six submarines, eight destroyers, 24 fast attack craft and 24 other vessels. This is not a fleet of great pretensions. It must cover 650 miles of coastline and protect the shipping

coming to Pakistan's one major port, Karachi."

"Yet the Indian Prime Minister avers that the Pakistani forces are a threat to his country". Let us "see if India's naval forces have been designed to counter the threat from Pakistan and, if not, what task they are required to undertake". With a submarine fleet of eight Foxtrot class, four Kilo to follow, and eight HDW planned, aircraft carrier Vikrant, augmented British carrier Hermes, Kresta cruisers, Kashin destroyers, indigenous production of destroyers and frigates and a large of missile craft, minesweepers, and support ships it appears a "considerable force which could flatten the Paki Navy in very short order." It really is "absurd, when, by the 1990s, well over half the Indian fleet will have been provided by the USSR. One cannot help feeling that the oft-repeated claims that India is a leader of the non-aligned countries and is foremost in her calls for a demilitarised Indian Ocean are somehow hollow in face of the facts. Today the Indian Navy is the most powerful indigenous naval force from Hainan to Port Said and is growing".

Indeed, as Indian Navy was "growing" in 1980s that perhaps was (and still is) the biggest security threat, not to foreigners per se, but, to India itself. Why? Because constant negative foreign propaganda amounting to psychological-war over years have made Indians more vulnerable to their own growth and strength as Indians, down the course of history, collectively, are not used to being seen as strong.

For India the story of self-preservation and self-defence is far from over. One can very well understand as to what awaits future from few more words of past analysis. "It is hardly surprising that the rapid and varied growth of the Indian Navy is of concern. The Indian naval enigma has been increasing over the years and this fleet now has the capability of disrupting the trade and the affairs of any of the Indian Ocean littoral countries were the Government in New Delhi so disposed.... At the start of Indian independence Nehru was prepared to keep the major powers at arms' length while he struggled with the huge problem of his new country. Indira Gandhi made her views clear when she criticised her father's acceptance of partition, believing fervently in India's natural pre-eminence and probably viewing the emergence of Bangladesh as the first major step in the unification of the whole sub-continent. Today her son, Rajiv Gandhi, is showing signs of statesmanlike and conciliatory approach....but, in the largest democracy in the world, no one man can control affairs. Mother's advisers are strong, determined men and shall hold positions of importance".

"Mrs Gandhi's premiership began 1966, a year after the first Soviet deployments to the Indian Ocean. 1968 saw the beginning of a transfer programme which, by 1986, is still in full spate. In March 1971 Mrs Gandhi returned to power with a large majority; in August the Indo-Soviet Treaty of Friendship was signed; on December 16, 1971 Indian troops entered Dhaka and East Pakistan was about to become Bangladesh. Both India and Pakistan had been sharply reminded of the value of the maritime capabilities at a time when the main strength of India's Navy had been provided from British yards. There was a pause in the surface ship transfer programme before 1976. From then on deliveries followed logical pattern". Indian Navy switched from London to Moscow. That indeed must have been quite a loss of lucrative "Indian market" to the former ruling class of Hindustan. Economics lost is status, prestige and position loss.

Understandably, the assessment of India continued to be in acidic tone:- "This is not the inventory of a country whose only purpose is to remain at peace in a peaceful ocean. It is far more the fleet of a country determined to establish a maritime hegemony amongst much weaker neighbours." Clearly, there is possibility for the "Indian move towards local super-power status". Navy as the instrument for the "establishment of Indian pre-eminence appears the most likely".

Strangely, the tirade, even as late as 1980s, continued unabated:- "The international analysis of the rationale behind India's naval expansion is gathering momentum. The facts are not in dispute, but the motives are more complicated. The navy took 6% of the defence budget in the 1970s, rising to 12% in 1988, and confidently expects to break through 20% by the end of the 20th century. There are 100 volunteers for every recruit enlisted (a figure likely to turn a dark shade of green other major navies' personnel departments)". Even the surplus availability of manpower for Indian navy recruitment was a matter of concern and comment by foreign experts and analysts!

The profound unhappiness beyond Indian shoreline gave an equally stunning verdict thus:- "That India intends to be the dominant regional maritime power 'from Suez to Malacca' can no longer be in doubt. In addition, numerous high level pronouncements since the US fleet sailed uninvited into the Bay of Bengal in 1971 have indicated a wish to be able to challenge Superpower supremacy at least at the level of normal US and Soviet Indian Ocean naval force deployments. Those on the Sub-Continent who may at first have doubted the utility of naval power must have been impressed by its

successful application first in Sri Lanka and then in the Maldives" (both in late 1980s). "The Indian Navy was also quick to make its presence felt in the Gulf shortly after the ceasefire between Iran and Iraq,"

In short, "India is beginning to appear to nations on the oceanic rim as a potentially belligerent state. Furthermore it is difficult to offer those nations much reassurance because one of the great strengths of sea power is that the true interpretation can be so vague and the options it offers so varied regardless of the original intentions".

One tried, through above mentioned narratives, to depict the grim reality; that the sustained and traditional western maritime, and naval industrial, nations could never take kindly to India's attempted modernisation of its obsolete naval assets with the assistance of Moscow, primarily owing to their loss of/to economics, shrinking employment opportunities and reduced, or total loss of, profit from steady Indian armament market. Indeed, only a divine intervention perhaps could have stopped the steady development of the Indian Navy of 1980s. And Divine Intervention did arrive suddenly, fulfilling the determined wishes and will power of the critics of India. In 1991, Moscow, the pivot supplier of naval technology and hardware to India, collapsed overnight as 1 USSR broke into 15 independent countries thereby putting instantaneous jammer into India's attempt to be counted upon as a developed, yet civilised, sea power of South Asia.

This momentous collapse of the mighty USSR understandably had an equally far reaching adverse impact on Indian naval planning. The whole of 1990s and beyond, to the 21st century, India faced a crisis of sorts pertaining to fleet logistics, maintenance, upgrading as well as joint venture indigenous production efforts. For the first time since independence India had to think of diversification of its naval assets procurement and acquisition procedure. The western nations came back to India's military operations and hardware plant production as 1990s saw a dramatic fall in the number of ships commissioned into the fleet. And suddenly India faced an unprecedented "block obsolescence" the most glaring example of which can be found in submarine squadron.

From the point of view of naval operations, this can be a serious matter in a crisis situation. Why? Because traditionally India had given preference to surface ships than the submarine. Thus when India inducted the first English origin second-hand aircraft carrier Vikrant in March 1961, shortly before Goa operations, it did not take into account that a carrier is highly vulnerable

to submarine attack if not protected, supported and accompanied by combat capable anti-submarine boats. Thus it took more than seven years after 1961 carrier deployment, for Indian Navy, to commission first submarine in July 1968. But psychologically India's neighbour Pakistan had already played the game better with the first induction of US origin submarine in 1964 itself.

Thus when India Pakistan war broke out in December 1971, Pakistani submarine Ghazi was deployed with the sole purpose of targeting India's carrier Vikrant. It is another matter that Ghazi failed owing to its over ambition off the eastern coast of Indian port of Vishakhapatnam. But the fundamental Pakistani tactics is unlikely to change. As had been referred to earlier, fleet-in-being is the weapon of the weak. And that is the likely method to be adopted by Islamabad. In a way it is also a limited "sea denial" modus operandi. If the Indian Navy with its superior inventory tries to do the "sea command and control" in the broadest possible sector from Singapore to Suez or Persian Gulf to Perth, the narrow sea lane adjoining the Makran coast and the waterways opposite Oman nevertheless would require more than normal surveillance, vigilance and deployment of Indian armada to neutralise any Pakistani attempt to disrupt the Indian oil and trade between say Bahrain or Bandar Abbas to Ballard Pier.

There is no doubt that India, whose history does not have much to show in naval matters, has come a long way in making remarkable progress during last four decades. So much so that the whole of 1980s saw public castigation and questioning by the west of India's intention and action. As if navy is the monopoly subject of the west.

According to the author, however, the greatest achievement of Indian naval planners has been in the field of indigenous ship building enterprise. An unprecedented achievement which also is the most vulnerable to attack, leakage, espionage and sabotage like that of the recent Scorpene submarine leakage.

Simultaneously, there also has been a major strategic miscalculation at the highest level in the past. For far too long, India emphasised more on surface ships and less on submarines. Thus banking on carrier implies a deep pocket too as no carrier can undertake a standalone mission in the ocean. It has to have an armada of destroyer, anti-submarine frigate, a submarine and logistic/supply ship together known as carrier battle group (CBG). A submarine, on the other hand, can undertake standalone mission with much less economics. Thus during cold war era when USA had a dozen carriers

(CBG) operating across the globe, USSR depended on submarines and that is one sector which the Americans were always visibly concerned and wary of. Between visible and invisible force, the latter's existence itself usually is always more disturbing and detection thereof harder than the former, ie. surface fleet.

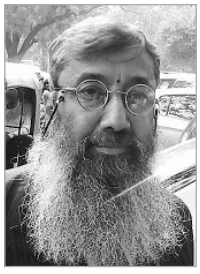
A few words about the present scenario would be in order now. Where does the naval doctrine of India stand at this point in time? Is India on a wicket strong enough to sustain on its own motion? The answer is yes and no. As referred to in preceding lines, without indigenisation of submarine and carrier enterprise also, mere dependence on 7000 ton destroyers of Mazagon Dock Mumbai, 5000 ton frigates of Garden Reach Ship Builders Kolkata and off shore patrol vessels from Goa Shipyard will not be able to fulfil the operational requirement of the "sea power of the state".

India visibly has been a late starter in indigenous submarine manufacture. And at present there is need to do things fast and change course giving priority to submarine manufacture in India. Else, there could develop an imbalance in the fleet deployment during operational times. India's romance with aircraft carrier is understandable as its possession and high profile visibility gives every nation a sense of pride and prestige. Its foreign port visit also amounts to power projection thereby doubling up for the diplomats of the carrier nation. It simply brings defence and diplomacy on the same table thereby giving decisive edge to the concerned nation. But that is all during times of peace and protocol. In contrast, a port of call by a submarine is likely to be a subdued, mysterious and only partially visible affair. The glamour of carrier cannot be claimed by any submarine, notwithstanding its sophistication, lethality and capability.

We started with the depiction of the Mediterranean Sea as the most bloodied of all water bodies of the world. We also had a glimpse of the Occident as the tormentor of the Orient, both in China and India. As luck would have it, both China and India today are breaking with their respective past to look beyond their traditional non- sea faring tag, to operate beyond the horizon, in the sea. In a way, what was Anglo-French naval rivalry of the past, contemporary world is witnessing a Sino-Indian competition for a place in the sea, clear advantage of the Chinese navy notwithstanding. It is indeed a queer turn of the wheels of history. Anglo-French naval strength and deployments today are the shadow of their past. Sino-Indian flotilla, in contrast, today have managed to leave behind their shadowy maritime

tradition, by regularly deploying naval assets thousands of miles beyond their shorelines. From anti-piracy operation to rescue mission to disaster relief to flag flying visit port call to joint exercise with foreign navies which were the monopoly prerogative of the west have now turned into competitive rights of the new navies of the Orient. With all its past difficulties and frequent inglorious chapters Indian Navy too has come of age with added responsibility as well as added possibility of nullifying all good things that have built up so far. Eternal vigilance is the price of liberty as well as the ability to operate without hindrance across the oceans.

Adv Abhijit Bhattacharyya



Author is a practising advocate since last six years in Supreme Court and various High Courts. Prior to that he was a lecturer in Delhi University college and then in IRS. He writes on 12 subjects and till date has 618 published articles in all leading English dailies of India. A visiting speaker to several defence/security establishments of the state and 1987 alumnus of NDC, he has motorcycled the entire country - solo. Flying in cockpit (in the past when he was in service) and traversing high hills of Himalayas have been his passion. He has been to Kailash Mansarovar twice as leader of Indian pilgrims. He has done posting from Andaman to Kashmir, Goa to (undivided) Andhra Pradesh and served in 9 ministries to Government of India. Physical fitness and yoga are his life.

Indo-US Defence Relations

Air Marshal NV Tyagi (Retd)

India and the USA, two largest democracies of the world, have a strong case for close relations in all spheres, more so in defence and diplomacy. Yet for several reasons these two had drifted apart during the cold-war period as US considered India to be in Soviet camp. India's two peaceful nuclear tests of 1974 and 1998 did not help matters. US found an ally in Pakistan, a country hostile to India. However, a need to balance China's rapidly rising military might and belligerent stance has brought the two together in the last fifteen years or so.

A series of meeting between India External Affairs Minister Jaswant Singh and US Deputy Secretary of State Strobe Talbott were held in late 1990s to improve relations between the two countries and find areas of cooperation. Although defence did not feature as a priority area then, some years later a Security Cooperation Group was constituted to coordinate defence deals. A small procurement case for purchase of weapon locating radars was taken up as a test case. It ran into some difficulty and its progress was far from smooth. In the last year of President Bush's first tenure, a concerted effort was made to improve relations between the two countries. In January 2004, a major initiative in the form of the Next Step in Strategic Partnership (NSSP) was launched. It covered cooperation in three areas; high technology trade, civilian space program and civilian nuclear program. Defence relations got a major push during second tenure of President Bush. In March 2005, Condoleezza Rice, US Secretary of State, visited India and made it clear that the US was keen to help India to become a major power. Three months later, new Indo-US Defence

ISSN 2347-9191 print

CASS Journal, Vol. 3, No. 4, October–December 2016, pp. 49–60

Framework Agreement was signed, covering a large range of activities including high technology areas. Around the same time India and US also reached an agreement for nuclear cooperation. A joint statement was made by Prime Minister Manmohan Singh and President George Bush on 18 July 2005, under which India agreed to separate its civil and military nuclear facilities and to place all its civil nuclear facilities under International Atomic Energy Agency (IAEA) safeguards and, in exchange, the United States agreed to work toward full civil nuclear cooperation with India. This resulted in the US gradually lifting sanctions on all Indian entities. Thus a roadmap for transfer of sensitive technologies was laid and export controls were eased.

Defence trade is a strategic tool that the US uses to build close military to military relationship with other countries. Indian defence purchases from the US, which were nearly zero for many years, started rising after signing of Defence Framework Agreement in 2005. Between 2005 and 2016, US military equipment worth more than $ 12 billion has been purchased by India. This includes, USS Trenton, Self- Protection Suit for VVIP Boing Business Jets, 12 C-130-J Super Hercules ($ 2 bn), 12 P-8I Maritime LRMR ($ 3 bn), 20 GE-404 engines for LCA, 10 C-17 Globemaster ($ 4 bn), 40 Harpoon anti-ship missiles, 500 CBU-97 Sensor Fused Weapons, 22 AH-64E Apache Attack Helicopters ($ 1.4 bn) and 15 CH-47F Chinook Heavy Lift helicopters ($ 1 bn). Some of the equipment listed above has been contracted but yet to be delivered.

One of the major offshoot of the Indo-US Defence Framework 2005 is Defence Trade and Technology Initiative. Although Indo-US defence trade was progressing well, The US desired higher level of engagement with India.

US Secretary of Defence Leon Panetta visited India on 07 June 2012. He had a meeting with Raksha Mantri AK Antony and proposed 'Defence Trade Initiative', which was aimed at easing the process of selling military equipment to India. Antony emphasized that the priority for India was to move beyond buyer-seller relationship and to focus on transfer of technology. He wanted the US to help India to indigenous capabilities. Secretary Panetta was supportive of Indian request and he assured that every effort would be made to meet India's technology demands. Secretary Panetta assigned the responsibility of steering DTI to Dr Ashton Carter, the then US Deputy Secretary of Defense who became the Obama Administration's point man for enhancing defence trade ties with India. Ashton Carter visited India in July 2012 to start a series of consultations with senior Indian officials for broadening the scope of US-India

security relationship. Response from MoD was lukewarm. They refused to get involved, hence from the Indian side DTI was steered by India's National Security Advisor Shiv Shankar Menon. By then American understanding of the term Defence Trade Initiative had been modified to include co-development and co-production opportunities, besides trade. Yet, Indian side preferred to call it Defence Technology Initiative, emphasising the need for technology transfer and boosting indigenous production. A compromise was found by converting it into Defence Trade and Technology Initiative (DTTI). Some in India still insist that 'technology' comes before 'trade'.

Ashton Carter visited India on 18 Sep 2013 to assess scope for technology cooperation through meetings with government functionaries and industry bodies. In consultation with the US Industry, a list of 10 projects had been prepared, to which 7 more were added later. Dr Ashton Carter had made an offer for co-development and co-production of products which could be sold internationally. This was a major policy statement that reflected a keen desire of the US to improve military ties with India. First proposal was for next generation Javelin anti-tank missile. Another offer was for electromagnetic aircraft launch system (EMALS), a newly developed technology for aircraft carrier operations which replaces steam catapult. India was only country other than UK and Australia to which co-development co-production offers had been made. Since there was no interest shown by the Indian government, no further progress was made.

Though DTTI failed to take off to a good start, Indo-US defence relations made good progress in 2013. After the 27 September 2013 summit meeting, President Barak Obama and Prime Minister Manmohan Singh issued a Joint Declaration on Defence Cooperation. It was the first time that such a joint statement was issued by the two governments. It stated, *"The United States and India share common security interests and place each other at the same level as their closest partners. This principle will apply with respect to defense technology transfer, trade, research, co-development and co-production for defense articles and services, including the most advanced and sophisticated technology." Department of Defense report to congress for the year 2013 stated, "U.S.–India defense ties are strong and growing. The U.S. Government's forward-leaning defense policies reflect increasing alignment on matters of shared security and a strategic partnership between two of the preeminent security powers in the Asia-Pacific region."*

After Modi government came to power, Indo-US relations took off in a new trajectory. Some months after coming to power, Prime Mister Narendra

Modi visited US from 26 to 30 September 2014. The Joint Statement issued in Washington on 30 September, gave prominence to defence ties between the two countries. It stated, *"The Prime Minister and the President stated their intention to expand defense cooperation to bolster national, regional, and global security. The two leaders reaffirmed that India and the United States would build an enduring partnership in which both sides treat each other at the same level as their closest partners, including defense technology transfers, trade, research, co-production, and co-development."* It went on to say, *"The leaders welcomed the first meeting under the framework of the Defense Trade and Technology Initiative in September 2014 and endorsed its decision to establish a Task Force to expeditiously evaluate and decide on unique projects and technologies which would have a transformative impact on bilateral defense relations and enhance India's defense industry and military capabilities"*. With clear directions from the top leadership, it was decided that DTTI will be monitored at three levels. US Secretary of Defence and RM will constitute the highest level, followed by US Under Secretary of Defence for Acquisitions, Technology and Logistics and Secretary Defence Production, at the next level. However, most work is done at the level of Defence Inter Agency Task Force, co-chaired by Director, International Cooperation on the US side and Deputy Chief of Integrated Defence Staff (Perspective Planning and Force Development) on the Indian side. They meet as often as required, at least once in six months. For each major development program, there is a Joint Working Group. Pentagon has created an India Rapid Reaction Cell to clear any roadblocks emerging in the US system.

In the initial meetings of DTTI held in Sep to Dec 2014, Indian side conveyed that India was keen on technology partnership and the 17 projects identified till then were not really suited for that purpose. Thus a list of five more R&D oriented programs was added. DTTI got renewed push after agreement between President Barak Obama and PM Narendra Modi was reached during formers visit to India for the Republic Day Parade 2015. While preparing for the visit in Dec 2014, four pathfinder programs were short listed, which included 'Raven UAS' and 'Roll-on Roll-off Surveillance Modules for C-130J' from the list of 17; and 'Mobile Hybrid Power Supply' and 'Protective Ensemble for Soldiers' from the list of five. In addition, Indian Navy had sought Aircraft Carrier technologies for futuristic Indian Aircraft Carrier IAC-2 program. US offer for that was centred around EMALS. IAF projected a requirement for jet engine technology and that was accepted. These two were termed flagship programs.

Defence Framework was renewed for a period of 10 years in July 2015. Since then DTTI has made considerable progress. Of the four pathfinder programs, two have fallen by the wayside. RQ-11 Raven mini unmanned aerial vehicle was not found suitable by the Indian Army for its requirements. Indian Air Force did not find role and scope of Ro-Ro modules fitting in its concept of operations. Discussions are being progressed in respect of two R&D oriented programs, which are mobile electric hybrid power source (300-800 kw) and new generation uniform integrated protection ensemble for soldiers. India is very keen on the two flagship programs but there are some glitches there too. Carrier technology is important for India to produce very large aircraft super-carriers. However, linking it with EMALS has made the cost extremely high. As per an article in the Economic Times dated 31 May 2016 by Manu Pubby, the defence ministry is doing a rethink on the prohibitively expensive futuristic aircraft carrier program. According to the same article, the cost of construction of the carrier itself, without aircraft would exceed Rs 70,000 Crore, primarily due to integration of the nuclear plant as well as EMALS system. The Joint Working Group on aero engines had concluded its terms of reference in December 2015. From the US industrial side, GE is involved. There are reports that engine technology is being linked Indian acceptance of US offer to produce either Boeing F-18 Super Hornet or Lockheed Martin F-16 Block 70/72 fighters in India. There are also concerns expressed that transfer of technology for an existing engine may not be adequate for India's quest for self-reliance in future.

Ashton Carter was appointed as Secretary of Defence for the US on 17 February 2015. Since then he has visited India several times. As per a recent media report, there have been six meetings between him and Indian Defence Minister Manohar Parrikar in the last one year. During Carter's last visit in April 2016, six more projects have been added under the banner of DTTI. Of these, two pathfinder projects are Digital Helmet Mounted Display and Joint Biological Tactical Detection System. The four S&T projects to be taken up in G-to-G mode are High Energy Laser, Cognitive Tools for Target Detection, Small Unmanned Aerial Systems and Treatment of Blast and Burn Traumatic Brain Injury. Under DIATF, five more working groups have been created to cover Aero Systems (Digital Accelerometer, Multi Spectral Radar), Naval Systems (Sonars and Torpedoes), Joint Biological Tactical Detection System, ISTAR and Other Weapons (High elevation multi-purpose UAS, Ground launched anti-UAV interceptors).

India and US have participated in several bilateral and multilateral exercises to understand each other's operational capability and exchange ideas on concept of modern warfare. To take a recent example, US participated in a multilateral exercise, code named 'Exercise Force-18', which was conducted at Aundh near Pune from 02 to 07 March 2016. The exercise was aimed at working out modalities for international cooperation for 'Humanitarian Mine Action' and 'Peace Keeping Operations'. Besides US, India and 10 ASEAN member states, 18 participating nations also comprised representatives from China, Japan, New Zealand, Russia, South Korea and Australia. IAF participated in advanced combat training Exercise Red Flag 16-1 from 28 April to 14 May 2016 at Eielson Air Force Base Alaska. IAF contingent comprised four Su-30 MKI, four Darin-II Jaguars, two IL-78 aerial tankers and two C-17 strategic lift aircraft. The aim was to demonstrate IAF's ability to project power in transcontinental deployment. During the exercise, fighters from both countries operated in composite formations in realistic scenarios.

Exercise Malabar is probably the most important regular engagement between India and US armed forces. It started as a bilateral exercise between Indian and US navies in 1992. It became a trilateral exercise with Japan joining in 2015. Ex MALABAR-16, was conducted from 14 to 17 June 2016 with the harbour phase at Sasebo in Japan from 10 to 13 June and the sea phase in the Pacific Ocean off Philippines Sea, from 14 to 17 June. Nine ships from the navies of India, US and Japan Maritime Self Defence Force took part in the exercise, the primary aim of which was to increase interoperability amongst the three navies and develop common understanding of procedures for Maritime Security Operations. China felt provoked due to on-going tension in South China Sea. However, the participating countries were careful to reiterate that this exercise was not directed at countering influence of any particular nation. Their aim was furtherance of internationally accepted maritime norms, such as freedom of navigation.

Interoperability of systems is an important aspect of US strategy for friendly nations. Ever since the New Defence Framework Agreement 2005 was activated, US was trying to get India to sign three basic agreements, namely Communication Interoperability and Security Memorandum of Agreement (CISMOA), Basic Exchange and Cooperation Agreement (BECA) and Logistics Support Agreement (LSA). The US argument was that LSA only facilitates simplification of logistics and accounting procedures during exercises and joint operations. CISMOA and BECA were considered essential for

technology exchange, without which full capabilities of US equipment being purchased by India could not be utilized. India was reluctant to sign these agreements mainly to avoid political ramifications of being seen getting into a military alliance with the US. After decades of persuasion and deft diplomatic handling, India agreed to a carefully drafted text of the current version of LSA, now termed Logistics Exchange Memorandum of Agreement (LEMOA). It was finally signed on 29 August 2016 in Washington during Defence Minister Parrikar's visit to the US. This agreement is a great enabler for joint operations as it permits mutual use of supplies, spares and services across the globe. It was emphasized by both sides that the agreement does not cover any permanent basing facility and all clearances will be given on case by case basis.

After signing of the US-India Civil Nuclear Deal (123 Agreement) in October 2008, India aspired to get membership of four technology denial regimes, namely the Nuclear Supplier's Group (NSG), the Missile Technology Control Regime (MTCR), the Wassenaar Agreement and the Australia Group. US has been committed to promoting India's cause quite unambiguously. India finally became the 35th member of the MTCR on 27 June 2016. This permits India to trade in critical high technology items controlled by MTCR, such as long range unmanned aerial systems and missiles. India's membership to the 48 member NSG was stonewalled by China despite very active support from the US. It is interesting to know that China is not a member of MTCR. It is important for India to gain membership of all four abovementioned denial regimes because it has a direct bearing on the status of a country in the US arms control laws.

Indo-US defence relationship has never been on such as strong footing as it has been under the Modi government. The Fact Sheet on US-India Defense Relationship issued by the US Department of Defense in 2015 states, *"The United States is committed to a long-term strategic partnership with India. We respect India as a regional and emerging global power as well as a provider of regional security. We see a growing convergence with India on our strategic outlook for the Asia-Pacific region and India's role in shaping the Asian landscape. The past decade has been particularly transformative in the bilateral relationship, culminating in President Obama's successful January trip to New Delhi as the Chief Guest for India's 66th Republic Day celebrations."* In a press conference held in Feb 2016, US Ambassador to India Richard Verma said that there is no country in world, other than India, that the US is supporting as an emerging global leader. He also stated that the US was focused on helping Indian forces develop the capabilities

and platform that will allow them to fulfill India's stated goal of becoming a leading power in the region and beyond. Prime Mister Modi has visited US four times since the NDA government came to power in mid-2014. Three of these visits have been in the last one year; 26-28 September 2015, 31 March - 01 April 2016 and 06-08 June 2016. India-US Joint Statement issued on 07 June 2016 under the title, 'The United States and India: Enduring Global Partners in the 21st Century' states, *"Noting that the U.S.-India defense relationship can be an anchor of stability, and given the increasingly strengthened cooperation in defense, the United States hereby recognizes India as a Major Defense Partner. As such:*

- *The United States will continue to work toward facilitating technology sharing with India to a level commensurate with that of its closest allies and partners. The leaders reached an understanding under which India would receive license-free access to a wide range of dual-use technologies in conjunction with steps that India has committed to take to advance its export control objectives.*

- *In support of India's Make in India initiative, and to support the development of robust defense industries and their integration into the global supply chain, the United States will continue to facilitate the export of goods and technologies, consistent with U.S. law, for projects, programs and joint ventures in support of official U.S.-India defense cooperation."*

Indo-US defence relationship has grown steadily because there is convergence of strategic objectives between the two nations. US has been giving increasing importance to Asian region since President Obama announced 'Pivot to Asia' policy in 2010 and focused it further to counter China with 'Pivot to East Asia' in 2012. India had been following 'Look East' policy which was modified to 'Act East' policy by Prime Minister Modi. The US wants India to play an important role in maintaining peace and stability in the region. India is open to such ideas but unwilling to go beyond what she considers reasonable limits. India is keen to maintain good relations with Russia and China; and hence, treading with caution in engagement with the US. In March 2016, India had declined US offer of joint patrol of South China Sea.

On the US side also there are several areas of concern. While key officials at Pentagon are clear about India's requirements of technology sharing, US legislature does not have similar orientation. Any number of declaration by the US President identifying India as a 'Major Defense Partner' do not fully change

India's status in US law regarding export control of critical defense technologies. Till the law is amended, presidential intervention will be required to push every case. On 22 March this year, a bill entitled 'The US India Defense Technology and Partnership Act' was introduced by Congressman George Holding in the US Congress, which would have formalized India's status as equal to US allies for the purpose congressional notifications. The bill got no co-sponsors and it made no progress. A watered down version of the bill called 'Enhancing Defense and Security Cooperation with India' was passed by the congress on 18 May 2016. Similarly, Senator John McCain had moved an amendment to National Defense and Authorization Act -2017 (NDAA-2017) in early June 2016 to have India recognized as a global strategic and defense partner of the US. The amendment was not taken up by the Senate while passing NDAA-2017, and it lapsed. Another amendment introduced by Senator Mark Kirk, called 'Defense and Security Co-operation with India' which dealt with only defense sales, was passed. This would simplify the procedures followed by Department of Defense, Department of Commerce and State Department for sale of military goods and services to India. The McCain amendment had much wider scope as it asked The US President to take such actions as may be necessary to recognize the status of India as a global strategic and defense partner.

There is another interesting aspect Indo-US relationship, pertaining to technology sharing. The US government considers authorization of sale of military good to any country as a privilege to be extended to friend and allies, and keeps it subject to several controls. Since US has technology lead even over other advanced nations, granting permission to a buyer to use such equipment is considered sharing of technology. Indian requirement in this respect is quite different. While a large amount of equipment has been purchased through Foreign Military Sales (FMS) route, wherever possible Indians have pressed for competitive procurement. Even in case of ongoing procurements of heavy lift helicopters and attack helicopters, the US responded to competitive tenders floated by India and emerged winner through normal multi-vendor selection process. Thereafter, FMS procedure was followed for the equipment which cannot be transacted through direct commercial sales route as per US regulations. Hence there was a disconnect between what the US had on offer and what India wanted by way of technology. Indian requirement is to fill gaps in technology to be able to design and develop state of the art systems to reduce share of imports in defence procurements from 70% to 30% in a less than a decade. US has not been partnering even its allies on the pattern desired

by India. In US product technologies are developed and owned by large defense vendors. The US government cannot force these vendors to transfer technology for non-commercial considerations. All these factors make the issue of co-development and co-production a bit more complex that what is commonly envisaged. For co-development model to succeed, there should be convergence of requirements; which will be difficult to achieve. US may want a system that can seamlessly integrate with its hi-tech weaponry for worldwide deployment. India has no such compulsion. It may be happy with a stand alone cost effective solution. Also, US operations are technology centric; Indian operations are manpower intensive, therefore, their specifications for equipment may be different.

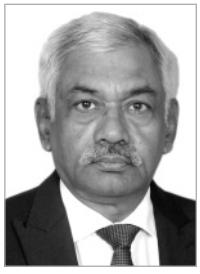
India has been able erase the memories of US sanctions against India but continued US support to Pakistan could become a matter of concern. As for the present, the Indo-US defence relationship seems to be on a path of steady growth. There have been eight bilateral meetings between PM Modi and President Obama, the last one being on 08 September 2016 on the side-lines of East Asia Summit in Laos. Defence Minister Parrikar and Secretary Carter also enjoy great rapport and have been meeting often. Instead of competitive procurement, India seems to be shifting towards direct government to government negotiations for major procurements. This has created additional opportunities for the US defence industry. During the last one year or so hardly any tenders for major equipment have been issued by the India MoD. Fighter assets of the Indian Air force have been declining due to phasing out of old fleets on completion of operational life. MMRCA, LCA and Fifth Generation Fighter Aircraft programs were expected to arrest force depletion. With MMRCA program cancelled and replaced with planned induction of only 36 Rafale fighters, and slow progress in case of the other two, MoD is looking at other options. Defence Minister has given clear indications that proposals received for Lockheed Martin for F-16, Boeing for F-18, as well as for Gripen from SAAB of Sweden for production of these aircraft in India will be considered soon. This offers new hope to joint aero-engine development program as engine on Gripen is also produced by General Electrics of USA. India has also expressed interest in acquiring Predator Avenger strike drones. US may consider favourably since India is already is a member of MTCR. General Atomics has already offered the reconnaissance version Predator-XP to India. The US will be electing a new President towards the end of this year. At this stage Hillary Clinton seems to have good lead over her rival Donald

Trump. Regardless of who wins, Indo-US defence relations are unlikely to be adversely affected as political imperatives which form the basis for this bond would remain the same.

Acknowledgement

Notes prepared by the author from media reports and articles published in Times of India, Economic Times, Hindustan Times newspapers; India Strategic, Force, and Vayu magazines and publications by Centre for Air Power Studies, Centre for Land Warfare Studies and Observer Research Foundation have been used to compile this article.

Air Marshal Nirdosh V Tyagi, PVSM, AVSM, VM, VSM (Retd)



Air Marshal Nirdosh Vatsyayan Tyagi is an alumnus of National Defence Academy. A fighter pilot and a Qualified Flying Instructor, he served as a Directing Staff at Defence Services Staff College. He was a member of the core team for formation of Strategic Forces Command. He retired from the post of Deputy Chief of the Air Staff (DCAS) in January 2011. As DCAS, he headed the branch at Air HQ which deals with Perspective Planning, Financial Planning and Capital Acquisition of major equipment. Post retirement he joined the private sector. He was Executive Director of Piramal Systems and Technologies Private Limited till end September 2013. He is a Distinguished Fellow at the Centre for Air Power Studies, New Delhi.

Brexit

Dr. Anil Nene

Introduction

On 23 June evening Ashwini and I voted to remain in the EU at our allotted polling booth. We were discussing this hot, well fought issue while coming back home. I think every British citizen thought this simmering issue is nothing short of Britain's survival, Britain's future! Therefore, I believed that very high percentage of population will vote, perhaps exceeding 83% of votes cast in the 1950 elections! Since the day Britain joined the EU, there was a segment of people, whether in politics or business, whether employed or unemployed, whether literate or highly educated, who were Eurosceptic. Over the years Euroscepticism was growing due to Brussels' bureaucracy, EU commission's growing centralisation of power over individual nation's sovereignty. Their percentage and size was growing. These EU emotions, remain or exit were culminated in the referendum as promised by David Cameron, on June 23!

I felt that those who wanted liberty from Europe such as Boris Johnson, Nigel Farrage, John Fox, Michael Gove and alike, the liberal Leavers are peddling an illusion. One contact with the reality of Brexit, their plans will fall apart. If Britain leaves the EU, it is likely to end up poorer, less open and less innovative. Far from reclaiming the global outlook, it will become less influential and more parochial. And without Britain, all of Europe would be worse off.

ISSN 2347-9191 print

CASS Journal, Vol. 3, No. 4, October–December 2016, pp. 61–70

Major Issues Which Played On Voters Minds

Economic Fallout of Brexit

Start with the economy. Even those voting Leave accept that there will be short-term damage. More important, Britain is unlikely to thrive in the longer run either. Almost half of its exports go to Europe. Access to the single market is vital for the City (City of London, one square mile, arguably the world capital of finance) and to attract foreign direct investment. Yet to maintain that access, Britain will have to observe EU regulations, contribute to the budget and accept the free movement of people the very things that Leave says it must avoid. To pretend otherwise is to mislead.

Those who advocate leaving make much of the chance to trade more easily with the rest of the world. That, too, is uncertain. Europe has dozens of trade pacts that Britain would need to replace. It would be a smaller, weaker negotiating partner. The time table would not be under its control, and the slow, grinding history of trade liberalisation shows that mercantilists tend to have upper hand. Nor is unshackling Britain from the EU likely to release a spate of liberal reforms at home. As the campaign ran its course, the Brexit side has stoked voters' prejudices and pandered to a little England mentality. Leave's free market rhetoric, when a loss making steelworks at Port Talbot in Wales was in danger of closing, Brexiters clamoured for state aid and tariff protection that even the supposedly protectionist EU would never allow.

Immigration Issues

The pandering has been still more shameless over immigration. Leave has warned that millions of more Turks are about to invade Britain, which is blatantly false. It has blamed strains on public services such as healthcare and education on immigration when immigrants, who are net contributors to the exchequer, help Britain foot the bill. It suggests that Britain cannot keep out murderers, rapists and terrorists, when, in fact, it can.

Polish people have overtaken Indians in numbers, but they are contributing to the British society by their enterprising attitude, such as Indians are contributing to every economic activity. Moreover, the number of Indians such as students are opting out to universities outside Britain. Indian doctors, engineers are searching for opportunities outside Britain.

EU Bureaucracy and Red Tape

Britons like to think of themselves as bracing free-market. They are quick to blame their woes on red tape from Brussels. In reality, though, they are addicted to regulation as any one else. Many of the biggest obstacles to growth - too few new houses, poor infrastructure and a skills gap - stem from British regulations. Since, joining the EU, successive British governments have failed to dismantle them. Leaving the EU would not make it easier.

While coming home both of us thought that British citizens' votes, on the aforesaid background, should lead to victory for Remain. Indeed, economists, business people and statesmen from around the world had queued up to warn Britain that leaving would be a mistake (though Mr. Trump is a fan. In fact, Trump invited Farrage, a staunch Leaver to address one of his campaign rallies!).

The Leave campaign scorns the almost universally gloomy economic forecasts of Britain's prospects outside the EU as the work 'experts' (as if knowledge was a hindrance to understanding). And it dismisses the Remain campaign for representing the elite (as if Boris Johnson, its figurehead, an Oxford-educated old Etonian, personified the common man!).

The most corrosive of these illusions is that the EU is run by unaccountable bureaucrats who trample on Britain's sovereignty as they plot a super-state. In reality, Brussels is dominated by governments who guard their power jealously. Making them more accountable is an argument about democracy, not sovereignty. The answer is not to storm out but to stay and work to create the Europe that Britain wants. Britain has played a decisive role in Europe - ask the French, who spent 1960s keeping it out of the club. Competition policy, the single market and enlargement to the east were all championed by Britain, and are profoundly in its interest. So long as Britain does not run away and hide, it has every reason to think that it will continue to have a powerful influence, even over the vexed subject of immigration. Leaving the EU would be a terrible error. If would weaken Europe and diminish Britain. I felt all this should lead Britain to vote for Remain.

David Cameron's Gamble Fails

How quickly the unthinkable became the irreversible! David Cameron's gamble of promising a referendum on Britain's EU membership failed. Almost 52% of the electorate had voted for Leave against 48% for Remain. The turnout was 72% (I was right of high turnout, wasn't I?), six points higher than the level in the May 2015 general election.

Voters had ignored the warnings of economists, allies and own government and after more than four decades in the EU, stepped boldly in the unknown! The tumbling of pound to 30-year low offered a taste of what is to come. As confidence plunges, Britain may well dip into recession. A permanently less vibrant economy means fewer jobs, lower tax receipts and eventually extra austerity. The result will shake a fragile world economy. Scots, most of whom voted to Remain, may now be keener to break free of the UK, as they nearly did in 2014. Across the channel, Eurosceptics, such as the French National Front will see Britain's flounce-out as encouragement. The EU, an institution that has helped keep peace in Europe for half a century.

When I heard Nigel Farrage, leader of the UK Independence Party, declaring, "June 23 marked Independence Day for Britain," I wondered independence for whom and from whom?

Factors Swinging The Leave Vote

What swung voters to leave after months of bitter campaigning when for most of the time Remain was slightly ahead? Four answers suggest themselves.

One is that, despite repeated warnings from national and international bodies, the Treasury, The IMF, the OECD, the CBI, the NIESR, the IFS and others that the economy would suffer as Brexit would lead to lower trade, less investment and lower growth, many voters were unimpressed because they did not feel the economy worked for them now. Michael Gove, the justice secretary declared that 'the people of enough of experts' and even likened the economists who warned against leaving the EU to Nazi propagandists against Einstein! Leavers also (Wrongly) accused them of wanting to join the troubled European single currency or more crudely, being in the pay of the EU. Boris Johnson kept adding fuel to the fire by saying we pay more to the EU (GBP300 million daily) than the benefits we receive!

Leavers also took on a strong anti-establishment tone, championing losers from globalisation and fiscal austerity of George Osborne. That message chimed well with Labour voters in northern England, who backed Leave unexpectedly heavily. Labour leader Corbyn's lack lustre, dull and unenthusiastic campaigning did not motivate working class people to vote for Remain, the Labour Party's official policy was for Remain. London, which voted strongly for Remain, and the north, which did the reverse, reveals a sharply polarised country, with a metropolitan elite that likes globalisation on one side and an angry working class that does not on the other.

The Leave campaign also won on immigration. David Cameron was unable to say how he could meet his twice promised target of reducing the net annual number of immigrants to the tens of thousands' so long as Britain was bound by the EU principle of the free movement of people. Remainers failed to convince voters that EU migrants brought economic benefits, or to explain that more than half the 330,000 net immigrants in 2015 came from outside the EU. The Leave that Britain should 'take back control' of its own affairs from Brussels worked especially well on this issue. It even trumped David Cameron's case that Brexit would be bad for security; voters chose to believe instead that more migration might let terrorism ship in.

The fourth factor boosting Leave was the voting pattern. Old people were both anti-EU and more likely to vote and Brexiters were more passionate. This mattered more than the fact that young people registered in record numbers in the final weeks. A strong Leave vote in England (outside London) more than offset Remain votes in Scotland and Northern Ireland. And although the Labour party backed Remain, many supporters were confused by the tepid stance of its leader Jeremy Corbyn.

What Next?

By invoking Article 50 of the Lisbon treaty, the only legal route to Brexit. It provides the terms on which Britain leaver must be agreed by a majority of the EU's other 27 countries, without a British vote. It sets a two-year deadline that can be extended only by unanimity.

Brexiters want to avoid all this by negotiating informally. But diplomats in Brussels are clear that the other 27 countries will refuse to talk unless Article 50 is invoked.

The question is how generous the other 27 countries will be. And the answer is surely: not very. for the EU, Brexit is a catastrophe. Europe is beset by crises; the Eurozone is troubled and divided, the refugee problem has not gone away, countries such as Hungary and Poland have launched in an illiberal direction, and populist (and anti-EU) parties are everywhere on the rise. Both French President Francois Hollande and Germany Chancellor, Angela Merkel face tricky elections next year.

The priority for the rest of the EU will be to make sure that nobody follows Britain's example. That precludes giving Britain a good deal. Leavers have retorted that, because Britain imports more from the EU than it sells to it, the other countries must offer a generous free-trade deal. But this betrays

a misunderstanding of both EU politics and trade talks. The EU cannot let Britain have full access to the single market without its obligations lest others ask for similar treatment. And Germany cannot offer Britain anything on its own, however strongly its carmakers push for it.

Likely Deals From EU

In practice the EU will offer Britain only two possible deals. The first is to join Norway in the European Economic Area. This would preserve full access to the single market. But, like Norway, Britain would have to make a hefty contribution to the EU budget (Norway pays about 85% as much as Britain per head), observe all EU single market regulations with no say in making them and crucially accept free movement of people from the EU. It is hard to imagine a post-Brexit government accepting this. The second is a free travel deal like the EU's with Canada. Yet this does not cover all trade, does not eliminate non-tariff barriers, excludes most financial services and could take years to agree.

The other option for Britain is to revert to trading with the EU as America, China and India do, under normal World Trade Organisation rules. But most economists say this would make the economic damage from Brexit worse. It would bring back mutual tariffs on cars, pharmaceuticals, food and fish. It would reinstate many non-tariff barriers. And it would include most services, including financial services.

Challenges arising from brexit

Economic And Trade Problems

The economic and trade problems arising from Brexit will dominate British politics for years to come. Security and foreign policy concerns will also emerge. The home secretary, the security services and the police may try to replicate the co-ordination measures that they have in place now with the rest of the EU, notably on intelligence- sharing. The foreign office may try to maintain its input into the EU's foreign policy discussions. But none of this will be easy and some may by impossible.

There will also be questions over the future of the United Kingdom. Both Scotland and Northern Ireland voted by clear majorities to remain in the EU, only to be overruled by the English and Welsh. Before the vote, Nicola Sturgeon, leader of the Scottish National Party, said Brexit might justify a second referendum on Scottish independence, though she is likely to proceed

with caution. Northern Ireland will be more immediately troubled. If Britain ends free movement of people, that may require the return of a hard border between Northern Ireland and its Southern neighbour.

Political Fallout

The political fallout from the vote will extend far beyond the issue of Theresa May, Prime Minister. The Tories also more split than ever; around 185 of their MPs backed Remain, and they will not welcome a Brexiter as leader. But Labour, too, is in trouble. Many pro-European MPs blame Jeremy Corbyn's weak endorsement of Remain for the Leave victory. Labour lost Scotland at the 2015 election; it may now lose northern England. Which voted heavily for Leave. The grinning of Michael Farage was the only and happy party leader on June 24.

This vote will reverberate for years. The economy will suffer, as well as political establishment. June 23 will be landmark in British and European history.

The last thing that America needs in further economic turmoil and navel gazing in a major trading partner and an indispensable ally when the 'Free West' needs to act as one, for instance, by sanctioning Russia or Iran. This possibility of such weakened distraction is one reason Russia sees Brexit as a victory - even though it had little to do with it. Dmitri Trenin, the head of the Carnegie Moscow Centre, a think tank, also expects a Britain-free EU to be less fundamentally close to America - something Russia will welcome. The Kremlin feels threatened by European institutions that attract former Soviet republics, such as Ukraine and Georgia, and is delighted to see them weakened. Dmitry Kiselev, a TV presenter and Vladimir Putin's Chief Propagandist, greeted the news with a rapture matched only by that of Marie Le Pen : Brexit is a turning point in the history of the EU. The number of EU members is declining.

Uncertain Future for Britain

All questions about the expansion are closed for a very long time, if not forever. I strongly believe that future is uncertain for a long time, economically and politically. Business and financial markets hate uncertainty. The vote for Brexit gives rise to a surfeit of it. Ahead of the referendum most economists agreed that leaving EU would be costly for Britain's economy in the longer term. However how the economy will react in the immediate future? Forecasts for economic growth are being revised down-markedly for Britain, materially for Europe and modestly for the world.

A lot depends on the kind of trade deal Britain can negotiate with the EU and how quickly its outline will emerge. The longer this takes the worse will be the economic impact. No single narrative can hope to do justice to the many permutations that are possible. But three broad scenarios cover most of the terrain.

Begin with the most benign of possible outcomes. The 27 other members of the EU, led by Germany and France, quickly agree on a common negotiating position that seeks to keep Britain as closely attached to Europe as possible without it being a member. In Britain either the leadership of Theresa May or a subsequent general election produces a Prime Minister with a strong mandate who can command a parliamentary majority. Both sides converge on a trade deal for Britain similar to the one enjoyed by Norway, with unfettered access to single market and with some of the burdens of full EU membership. The fine details might take years to iron out fully, but agreement on a deal's outline would give enough certainty to businesses in Britain to resume some investment.

In this event, the British economy would suffer a rotten few months, but a bounce-back might be evident by the end of 2016. Sterling would rally in anticipation. The spill overs to Europe and the global economy would be small and transitory. The path would be similar if Britain could quickly find a way to reverse its decision to leave!

In the second case, which is also most likely, discussions are considerably longer drawn out. Both sides come to a settled idea of the deal they each want by the autumn but they remain divided on issues such as the free movement of labour, payments to the EU budget and compliances with its regulations.

In this unsettled state of affairs, businesses in Britain defer whatever spending they can. The biggest casualties will be capital projects with big upfront costs whose profitability depends on friction-free trading with Europe, or on access to other export markets in which Britain enjoys only because of trade deals negotiated by the EU. The Pound remains weak, indeed falls further.

In this middling scenario, the combined effects of business uncertainty and a weaker Pound would be likely to cut the economy's growth rate in the next 12 to 18 months. A recession in Britain would hurt exporters in the rest of the Europe, where some freezing of capital spending is also likely.

Apart from economic turmoil, uncertainty hangs on another union, United Kingdom! supporters of the EU in Scotland and Northern Ireland - both of which returned healthy majorities for remain are unhappy at being dragged out of Europe by the English. Some now believe the best remedy would be to leave the UK!

Conclusion

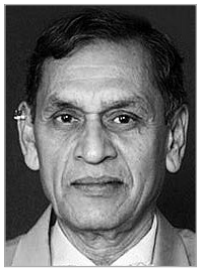
Brexit has created so many political, economic, financial and social questions. What are the answers to these question? What are the solutions to the problems? Who will give answers and solutions? I think only 'time' will be able to answer these questions and offer solutions. 'Wait and see' is the 'mantra' of the day! Brexit has tangled so many issues of Britain's future in one giant knot called Leave. Politicians, in London and Brussels, economist, businesses, financiers and host of other agencies will need to strive hard to calm down the British boat in these utterly choppy waters to steer to safe and smooth docking.

Britain needs genuine friends to remove uncertainty. I believe India can play a leading role for Britain in Asia. India can be a friend in need is friend in deed for Britain in Asia. Indian economy is one of the fastest growing economies in the world. The pace of Indian economic growth can be boosted by strengthening economic, financial and business ties with Britain. Both the government and India Inc. can play vital role in attracting investments in India and investing in Britain, concluding ambitious trade deals, forming strategic joint ventures for manufacturing, providing services on larger scales, helping each other in the political arena, whether at international or regional organisations and so forth. Growing relationships on sound footing will help India and Britain to keep on prospering. Immediate and regular dialogue will open up new avenues for mutual benefits. Indian diaspora can play vital, necessary, pivotal role in cementing these relationships. It will be win-win situation for both the countries.

References

• The Economist, Financial Times, BBC and visual and printed media.

Dr Anil D. Nene, Economist, London



Mr. Anil Nene has spent over four decades in England and has been working as an investment banker for several years in London. He has been Professor at Schiller International University where he taught Strategic Management and International Marketing to post graduate students. He has also been instrumental in grooming aspiring executives through Executive Development Programs at the University of Surrey Management School.

With his deep insights in Economics, Finance and Management, Mr. Nene has written over 200 articles in several Marathi dailies - Sakal, Loksatta, Maharashtra Times, Sagar, Lookmat, Ekata, Global Marathi to name some. He has a passion for travel which enables him to experience the different cultures and lifestyles across the world. His book, 'Khaave tyachya desha' lucidly describes his experiences as a globetrotter, when he relished the cuisines and cultures of different countries.

'Manogat' (Musings), Mr. Nene's collection of poems has been published by MayBoli, in Israel. The proceeds of the sale of this book are utilized for the benefit of Marathi Jewish students in Israel. An academician, economist, writer and globetrotter, Mr. Nene has built close relations with several charity, social, educational and arts organizations in the UK, Europe, India and Israel which makes for a delightful channel to use his knowledge and interests for humanitarian initiatives.

Quest for Credible Air Power

Air Marshal PV Athawale (Retd)

Introduction

The Indian Air Force has come a long way since its inception. Indian Armed Forces, including the IAF, have progressed in independent India to be internationally acknowledged. But, the central question continues to be – Have we achieved our goal or are we on track?

Apart from the 1962 debacle, the results of all wars (or conflicts) may not truly reflect the status within. Post war reviews have revealed that the military was poorly placed every time. Non-availability of weapons and operational platforms and shortage of spares have been common causes of ineffectiveness all through this long period. Indigenous R&D and industry have not supported the military adequately, and yet, called the shots along with the national leadership and bureaucracy to dictate military requirements. The Make in India programme has not quite delivered on its promise as far as the defence requirements are concerned.

Institute of Defence Studies & Analysis New Delhi had published a book in early 2015 on 'Core Concerns in Indian Defence and the Imperatives for Reforms'[1]. Three former Chiefs of Army, Navy and Air Force respectively had written their points of view. The essence of their arguments was helplessness. Political leadership kept a distance from the military; the military was managed

1 Core Concerns in Indian Defence and The Imperatives for Reforms – By Pentagon Press for Institute of Defence Studies and Analysis, New Delhi.

ISSN 2347-9191 print

CASS Journal, Vol. 3, No. 4, October–December 2016, pp. 71–86

by a risk-averse government body devoid of expertise in military matters; and defence of the nation was assigned to the bureaucratic head (without corresponding accountability) forming a layer between the political leadership and the armed forces – were a few comments.

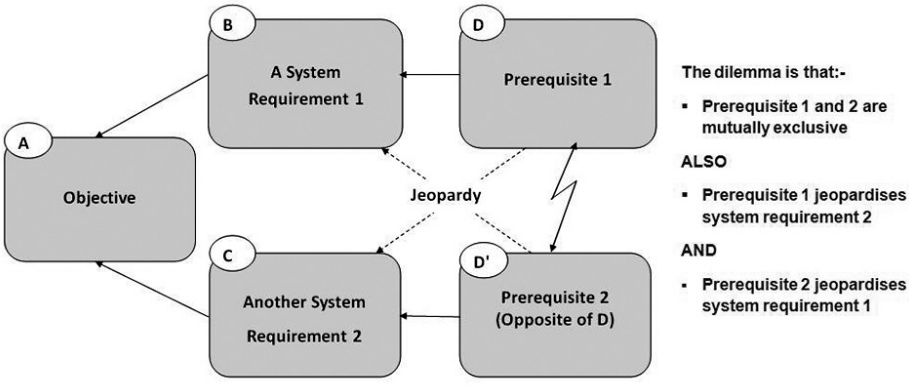
In the view of a former Defence Secretary, the armed forces are used to accomplishing missions, regardless of the costs, methods and means as opposed to the civilian counterpart. He says that '*assertion*', is an intrinsic military characteristic, whereas the political and bureaucratic side is open to a system of debate. He also emphasises that notwithstanding factors of competence and specialisation, a layer of civilian bureaucracy between political leadership and military is necessary and is a reality to be accepted.

Without great knowledge about defence matters, a layman reading different perspectives will tend to believe in each of these conflicting views. And, that is what makes this conflict engaging and solutions difficult. The conflict is classical where a decision maker at the head of the two branches with conflicting views (in this case military and bureaucracy) cannot be sure of making a change. This results in decision paralysis.

Things are not all that bleak. The reason for optimism is that all stakeholders are well meaning and dedicated to the national cause. Then, how is that, we find ourselves short of achievement? Why is it that acquisition processes take decades before culmination? Why do we make one LCA in over three decades? That is precisely the problem with different departments working towards local optima!

Dr. Eliyahu M. Goldratt articulated the 'Theory of constraints' [2] and proposed a wonderful method of working towards resolution of conflicts that restrict achievement of the goal. He articulated that non achievement of goal in any system was due to a very small number of constraints (at least one constraint). He explained that a problem existed only if, in satisfying two requirements supporting the objective, corresponding prerequisites (or actions) were in conflict as shown in the diagram below. Departments perceive prerequisites (actions) differently depending upon their local measures. Conventionally the core problem is placed in block D. The answer is in D' but ***actions in D and D' are mutually exclusive.***

2 Theory of Constraints' by Goldratt EM (1990)- The North River Press Publishing Corporation.



"If I had an hour to solve a problem I'd spend 55 minutes thinking about the problem and 5 minutes thinking about solutions."
-Albert Einstein

Visualising the cloud represents clear problem definition. The power is in verbalizing assumptions as follows:-

- In order to achieve objective (A) we must satisfy the requirement (B) because - - - (a number of reasons)
- In order to achieve objective (A) we must satisfy the requirement (C) because - - -
- In order to satisfy the requirement (B) we must do (D) because - - -
- In order to satisfy the requirement (C) we must do (D') because - - -

The solution begins with identifying and then verifying assumptions that 'cloud' our minds. Assumptions are statements which are accepted as reality without questioning or demanding a proof. Therefore, invalidating some of our assumptions while reinforcing others gets us to a solution depicted as 'evaporating the cloud of conflict'.

Theory of Constraints' fundamental paradigm is that ***all people are good – our assumptions are inappropriate.*** Wrong assumptions lead to conflicts and consequently non-achievement of the goal. Identifying core problems, verbalizing and verifying assumptions to evaporate clouds is the key to success. This essay is an attempt in that direction with reference to the predicament of Indian Armed Forces in general and Air Force in particular.

'I am God' won't Make in India

Years ago, a Swamiji was invited by the College of Defence Management as a part of a series of guest lectures. What stayed with me was his analogy for human behaviour. He spoke about the two distinctive human behavioural patterns – the *'dog pattern' and the 'cat pattern'*. A dog and a cat lived in each other's neighbourhood. Both were happy in their respective lives. The dog said "I am happy; my master looks after me very well – he is God". The cat was different. He said "I am happy; my master looks after me very well because I am God".

Ever since, I have looked at different situations of conflict with Swamji's wisdom. Everything falls into place once we appreciate the patterns of human behaviour where some people or organisations expect others to submit to them. I call it the *'I am God'* syndrome.

When interacting elements begin to believe that *'I am God'*, despite each one meaning well, the result is a lack of synergy and non-accomplishment. This is what happens between the players that aspire to build *indigenous capability for the Indian Armed Forces*.

People often cite the development of space capability and the accomplishments in atomic energy and exclaim "If they can, why not the Defence!" They overlook the unity of direction in those domains - the designer, developer, user and maintainer being under the control of a single agency.

The military capability of a nation rests on a triangular base. The three pillars are (i) Armed Forces on the basis of assets and training/ preparation, (ii) Research & Development capability, and (iii) Manufacturing/Industrial capacity. The military could also be classified into three distinct classes on the basis of its influence, (i) Local, (ii) Regional and (iii) Global. However proficient, a fighting force be, its reach will be localised if the nation's R&D and industrial capability are insignificant. For a nation to aspire to enhance its military influence to the regional level, it has to progressively improve its industrial capability. Finally, any military can have Global influence only if the nation's R&D and industry are dominant players with a cutting edge over adversaries. This gives its military the first use of best weapon systems to develop operational concepts and tactics ahead of other nations.

Let us remember that '*Make in India for Defence'* must not be our g*oal*. The goal is to have a strong military to help the nation protect its identity and assert its will. Enhanced indigenous industrial capability is a prerequisite for the nation's military to be reliable and effective in times of crisis. Therefore, indigenous design/development and manufacturing capability are *necessary*

conditions for achieving the goal of maintaining a powerful military force. This simply means that 'Made in India' cannot be forced upon the military without ensuring that it meets the requirements. In a panel discussion on the subject at IIT Roorkee, the Raksha Mantri had pointed out this prerequisite by saying "the needs of the armed forces cannot be overlooked".

Each one of the three pillars or components of military capability (Armed Forces, R&D, and Industrial Capacity) is often measured for performance in isolation. Consequently, each one strives to maximise its performance in seclusion. It is convenient to work independently towards a localised objective. The industry (mainly Defence PSUs) have made profits through licensed manufacturing, while progressively reducing the design & development effort – the local measures of production and profits have been well satisfied. The DRDO, satisfied in accomplishing programmes which permit autonomy in execution, has given little of significance to military aviation's requirements. Both DRDO and Defence PSUs view the Armed Forces' penchant for foreign systems as a problem. The Armed Forces, who carry the ultimate responsibility, justify foreign purchases because of the lack of availability of indigenously developed state-of-the-art weapon systems.

Strategic thinkers often wonder why we cannot produce indigenous designs today, when we (HAL) had produced an indigenously designed and developed multi role fighter aircraft (HF-24 Marut) in the early sixties.

Back then, DRDO hadn't quite grown and HAL top management was deputed from the Air Force. These situations are not relevant to the size of these organisations and the expected performance from defence R & D and industry today. Yet, the fact is that the unified direction and control of those times was vital in creating HF-24 Marut.

Both DRDO and HAL are now big empires; Gods in their own right, who desire submission by their clients and acceptance of their products as a mark of appreciation for their hard work. It is not uncommon to hear expressions like "The Air Force would keep asking for more, but, had to be directed to accept!"

On its part, the Air Force is not happy to compromise specs - There is a limit to which the genius of our pilots can offset aircraft deficiencies compared to adversaries. When the old specs are nearly met a decade later, the world has moved on and those specs now fall short of the Air Force's current expectations. And the process goes on.. As a solution, the Air Force looks for more control and makes futile attempts to make the impossible happen - have an Air Force pilot as the Chairman HAL!

Every player in the arena has noble intentions towards making the nation stronger. However, each one's perception of the requirements is different. These perceptions differ because they are based on inappropriate assumptions to satisfy local measures. The result is that we have three Gods to be brought together (in addition to the much needed private industry).

The solution is in 'win-win' – no one should be forced into compromises. The industry shouldn't be made to wait endlessly for products to be put to use. There is no short cut to development of hi-tech systems. Our own armed forces have to use indigenous systems at intermediate stages of technological development for products to mature and be counted among the best in the world. At the same time, the armed forces need for state-of-the-art should be acknowledged before jeopardising acquisitions in view of unrealistic assurances of indigenous development timeframes.

The *'I am God'* syndrome won't permit us to make in India until all agencies come together to find this win-win solution. The Raksha Mantri may consider appointment of a coordination group consisting those with techno-military acumen to facilitate synergy and advise him directly without the bureaucracy stepping in as another *Super God*.

Evaporate clouds for Defence Indigenisation

The maxim "Machines do not make things, humans do" is reflected in the status of indigenous defence manufacturing in India. India's dubious distinction as the top global importer for defence purchase is *not due to lack of technology*, but predominantly *due to lack of commitment and synergy of human effort*. Even so, the commitment from the government is most unequivocally visible today compared to the decades spent in rhetoric about promotion of Indian industry, especially the private sector.

While the commitment for action is strong, the progress will not be well directed unless we understand and resolve the conflict which paralyses us in the status-quo. Continual tinkering with Defence Procurement Procedures (DPP) or writing thicker rulebooks look like solutions but result in little progress when there is no change in the way we think about the deadlock.

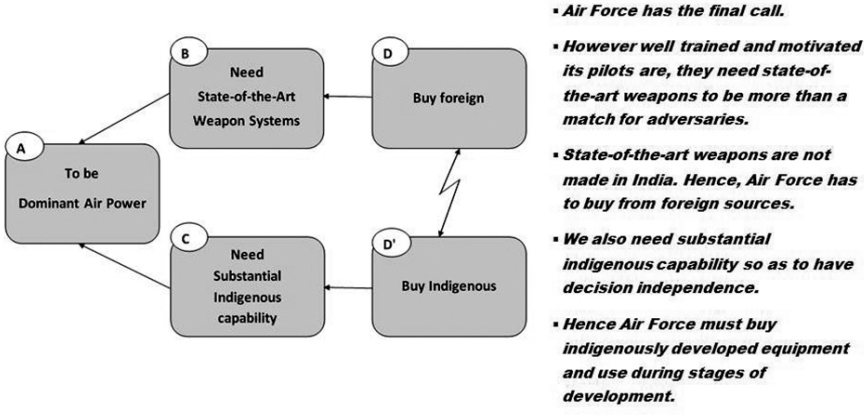
"The world we have created is a process of our thinking. It cannot be changed without changing our thinking"
- Albert Einstein

Air Force acquisitions are major contributors towards India's standing among global arms importers. The examples and discussions here are, therefore, specific to the Air Force or military aviation requirements.

Core constraints, have usually been in existence for long and intuitively well known. Many compromising solutions have possibly been implemented over and over again without success. A few of our examples of compromising virtual solutions are:-

- Compel the Air Force to buy Indian and not foreign equipment.
- Deny them technology, and they (DRDO and DPSUs) will make.
- We cannot go to a single private company – let DRDO or DPSUs subcontract to private industry.
- A fatter rule book; write more detailed Defence Procurement Procedures (DPP).
- Air Force telling Indian industry "We support indigenisation; make excellent equipment and we will buy".

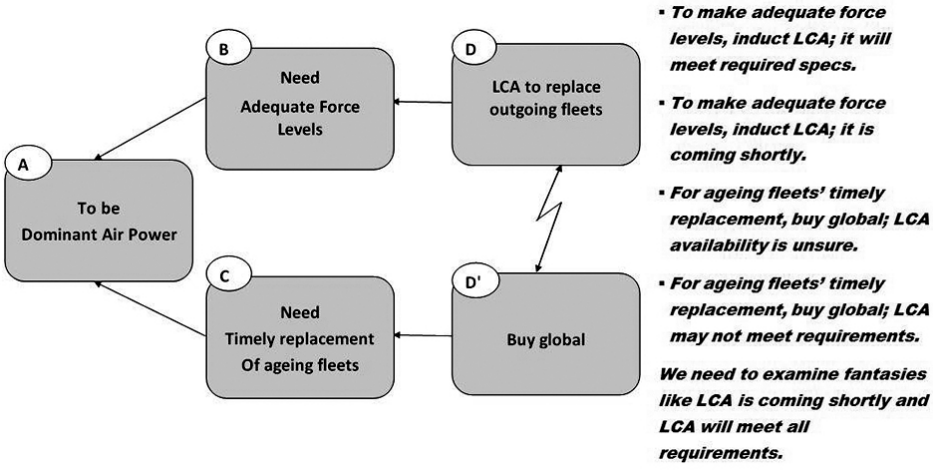
Goldratt thought of the core problem as a dark black cloud and termed the method to a solution the *Evaporating Clouds method*. The need is to invent solutions where the problem won't exist. To find solutions, he emphasized on 'No Blames'!



"When you blame others, you give up your power to change"
- Robert Anthony

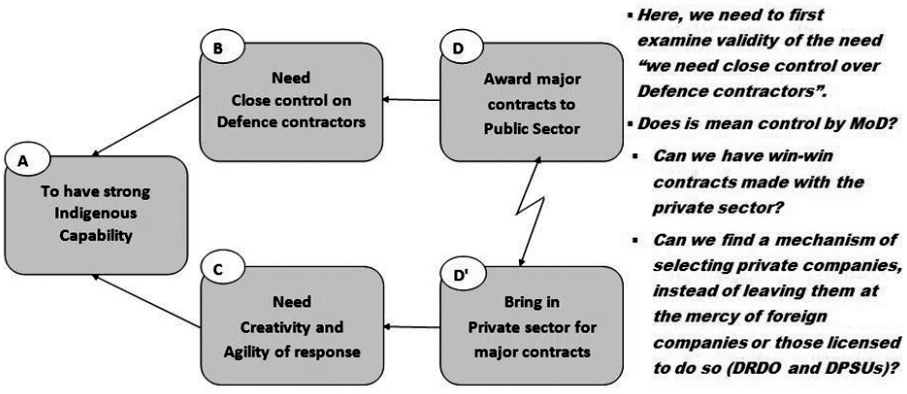
In the context of the deadlock between actions for indigenous defence manufacturing, Goldratt's Cloud of Conflict can be represented as shown above. The core problem listed in block D is that we have to buy from foreign sources. The answer is in block D', i.e. buy Indian, but we can't - we are locked in conflict because state-of-the-art systems are not made in India.

Let us begin to verbalise assumptions and then question their validity. Some of the system requirements may also have to be reviewed. The budget is limited - Our forces cannot possess all state-of-the-art platforms at any given time. IPL cricket is the best example, where a franchise has to maximize its firepower within the given budget following the norms laid down for acquiring foreign players. Similarly, it may be necessary to decide the minimum force level (acquisition) that can be indigenous, even if below par with globally top of the line; the follow up developments/upgrades must aspire to be state-of-the-art. *The frontline needs, however, will have to be met with globally competitive platforms*



The answer lies in all parties coming together. *Consequently, in the environment of trust that will develop, the Air Force may be assured that its acquisition needs for foreign purchase will not be jeopardized due to unrealistic timeframes of indigenous programmes. It will be better prepared to accept indigenous effort.* The conflict cloud is as shown below.

The core problem indicated in block D is that it has been projected for decades that LCA would replace ageing fleets. Verbalising assumptions (some inappropriate and others valid) can indicate a solution to this dilemma. We have to put ourselves in 1990, 2000 and also in 2010 respectively to read a few



assumptions (indicated in blue) that have been in existence for decades.

One more vital cloud needs to be dissipated – the fear of private industry. The core problem in D is that major contracts are awarded only to PSUs. *Despite exciting discussions in seminars, nothing much has resulted about getting private industry's participation in a level playing field.* The cloud is shown below. The example of inappropriateness of one of the system's requirements is explained alongside. Examination of other assumptions can follow.

Indigenous design/development and defence manufacturing have unique challenges like *a single user market* and *a single R&D agency* i.e. the Govt. The industry, including the private sector, can grow only if the following measures are implemented:-

- Until a 50% satisfaction level, the Armed Forces are put in the driver's seat AND accordingly measured for indigenisation. *The industry will race ahead after that*.
- The Defence R&D is well supported by the Armed Forces (partnership in vital projects) with measurable targets for achievement by both.
- Defence PSUs are measured for performance predominantly by the amount of indigenous design/development and manufacture and NOT profits made through licensed manufacturing and support services.
- Defence manufacturing is made more assured and profitable for the private industry.

Today's solution may not be relevant tomorrow. As the indigenous capability improves, a new force mix will have to be evolved and pursued. Strong indigenous industry exporting to friendly neighbours can further strengthen regional balance. It is the hope that whatever the relevant solutions in the changing tomorrows,

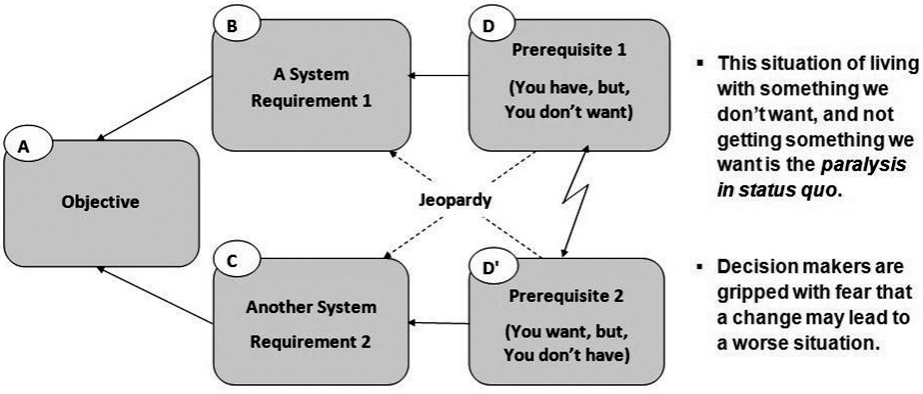
below par indigenous weapon systems will never have to be bought by the Indian Armed Forces. Let us always remember that ***the end goal is not import or indeginisation but securing the country through able and ready armed forces***.

In Search of Solutions for IAF's Dwindling Assets

Continuing where we left 'Evaporating clouds for Defence Indigenisation'.. Let us take up the problem of IAF's dwindling combat assets. Strategic thinkers have been discussing and debating this issue for over two decades. Yet, there has not been any improvement in the situation because, despite good intentions, actions by the establishment have not been well directed. The core problems lay elsewhere and what we dealt with were mere symptoms.

A few examples of symptoms are - fast reducing number of IAF fighter squadrons (armed forces assets), inadequate contribution of indigenous industry, and lack of interest in young Indians towards joining the armed forces. The perceived solutions are - exhort those concerned with acquisitions to expedite important cases, set up a committee to recommend actions to invigorate Defence R&D and industry, and send armed forces personnel to schools and universities to attract youngsters. The real causes behind the symptoms are not addressed; consequently, the symptoms resurface after some time.

Goldratt explains situations where a cause results into many undesirable effects or problems. He asks us to focus on it as a core constraint or problem. Further, he says that a core problem has usually been in the system for long. As such, solutions addressing its symptoms would have already been tried unsuccessfully. Therefore, he suggests that we "re-examine the foundations of the system to invent simple solutions to create an environment where the problem simply cannot exist"



Goldratt's problem cloud has prerequisites 1 and 2 in conflict with each other. Kelvyn Youngman[3] further explains that Prerequisite 1 ***is 'you have something which you don't want'***, and Prerequisite ***2 is 'you don't have but you want to have'***.

A combat force essentially needs a force mix where the life cycles (induction to disposal) of different fleets are staggered in time. It means that even with long fleet lives of the order of 30 to 40 years, *acquisitions for replacements will need to be processed every 6 to 8 years*. Include mid-life upgrades and systems integration needs, and the ***time period permissible for acquisitions would only be 4 to 5 years***.

In contrast to the above requirements, our purchase processes have gone on for anything between 10 to 30 years from conception of staff requirements to orders placement. Account for contracts execution periods of at least 3 to 5 years (sometimes far more), and the huge gap between requirements and needs' fulfillment begins to look horrifying.

Add to this, the uncertainties of indigenous developments leading to drastic elongation of timeframes and ***we are perennially in crisis***. Without any balance between life expiry and new acquisitions, how will it ever be possible for us to maintain desired force levels? No wonder that it has become a habit with us to extend lives of old unreliable aeroplanes and attempt adaptation of aeroplanes to unfamiliar roles.

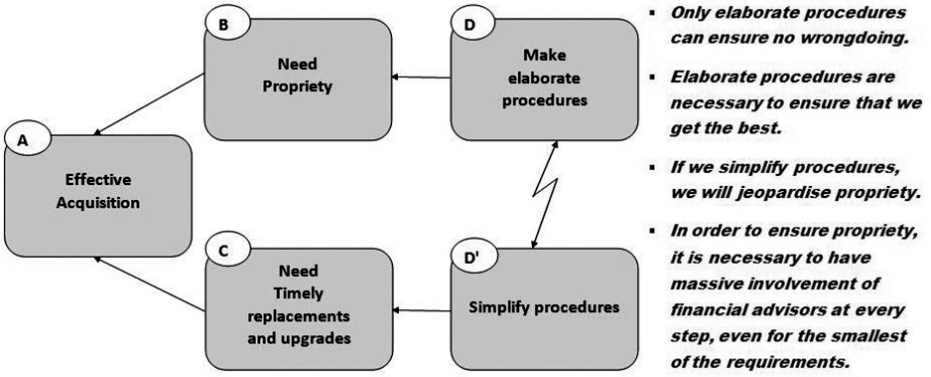
"***You have to visualize requirements for what you need 10 years hence", seniors counsel the staff, never sure if even 10 years would be adequate***. It is ridiculous that we also have procedures to forecast our spares requirement (even from established suppliers) 3 to 5 years in advance. Clearly, this approach is unsustainable in the fast moving world where agility is vital. We have to think differently and move to a new paradigm.

"You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete."
- R. Buckminster Fuller

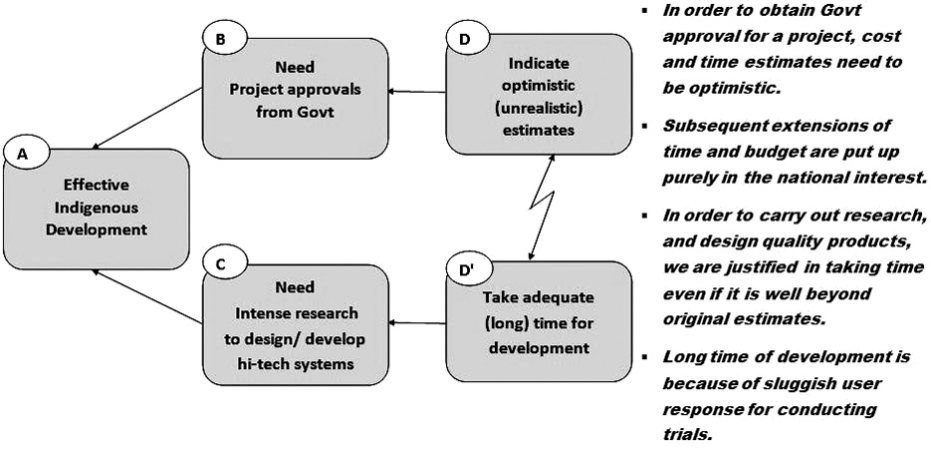
A logical process of effect-cause-effect analysis would lead us to core constraints. However, without going into the details, I wish to use the aforementioned discussion to indicate the two core problems:-

- ***Our acquisition process is extremely long and uncertain.***
- ***Projection of indigenous development timeframe is unrealistic.***

3 On line guide in implementing TOC 2008-2009 by Dr. Kelvyn Youngman.



The cloud representing the conflict in acquisition process can be drawn as shown below. The core constraint is placed in block ***D.*** A few assumptions that need to be validated are shown alongside.



The indigenous development cloud can be drawn as shown. ***The core constraint is indication of unrealistic/ optimistic estimates for indigenous development***. Once again the assumptions indicated alongside are representative of the deadlock.

Delayed indigenous design/development/production and sluggish acquisition process have plagued Indian Air Force for a significantly long period. One sincerely hopes that we recover quickly before going down to dangerous levels.

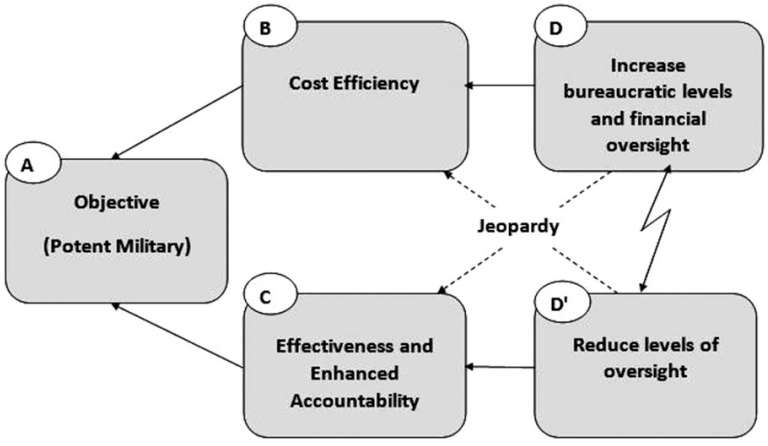
In The Wonderland of Cost Efficiency

The system built around the paradigm of cost efficiency does not permit the military to be seen as an enterprise that consumes money or resources (always scarce) to produce an output, even if it is not measurable in money. Business as a process has two ends; input and output, which are both interdependent. In comparison, our armed forces have two distinct predicaments:-

- They are tied down at the input with fixed budgetary ceilings. Even as the leadership expects the armed forces to plan capability based programmes depending on threats, the plans are required to fit fixed budgetary ceilings.
  - However critical the threat assessment and consequently vital the plans be, the budget ceilings are sacrosanct.
  - The interdependence between economics and military needs is tricky.
  - *No wonder, a little lack of understanding the services' assessment by the controllers (finance and bureaucracy) is seen as lack of planning by the armed forces.*
- An even more peculiar situation is that the outcome is taken for granted. Whether you have 42 Squadrons or 30 or 28, you are required to secure the nation as expected of you! With this view of having a fixed outcome that is armed forces' responsibility, the finance and bureaucracy run wild into the world of cost efficiency. A few examples would be relevant.
  - A delay in acquisition improves your efficiency because money is saved for many years.
  - An aircraft upgrade project delayed by 5 years improves Air Force's efficiency because payments have been delayed. Effects of a number of aircraft held up in hangars and many in Squadron service with lower capability are not measured – you are considered to have the same number of squadrons.
  - Cut manpower, and you improve efficiency because less number of people are deployed for the same (given constant) output.
  - Efficiency is improved only by cutting cost; outcome is not relevant!

Financial advisors lack the knowledge to scrutinize military capability requirements, but exert control on the budget planning and expenditure. The administrative bureaucracy remains disconnected and intent on exercising control without "crossing the finance path". Lack of an integrated approach at the national level and consequently ***poor understanding by the civil bureaucracy, leads to the Services' assessment viewed as 'Generals asking for more without regard to money'.*** The whole system eventually gets accustomed to ***budgets being finalised as a percentage of rise or cut from the previous allotments***.

The revenue vs. capital debate rises ever so often. A decade ago, the argument was that big purchases for costly components and spares were booked under the revenue head. This was considered inappropriate because besides showing a lopsided picture of revenue vs. capital expenditure, the capital heads were left unspent. ***Intriguing it is that the bureaucratic sluggishness of acquisition process wasn't considered a reason for unspent capital budgets***. Now the argument has changed direction to zero in on the manpower (and pensions) as the cause of high revenue expenditure resulting in lack of modernization.



The cost world has astutely created armies of Financial Advisors to oversee the functioning of armed forces. Commanders cannot move an inch without their agility being dampened by financial advisors! The Cloud of conflict can be indicated as shown.

The dominance of the cost world over the throughput world reflects in our psyche of treating Ex-servicemen drawing pensions as a burden instead of exploiting their acumen. Engineers and technicians with armed forces experience and training can compete with the best anywhere. The Defence R & D and manufacturing industry comprising DRDO, DGQA/ DGAQA and DPSUs have made huge empires somewhat isolated from the Armed Forces. They hesitate to acknowledge the worth of Ex-servicemen and accommodate them. Here is a huge opportunity for them as well as the private sector to absorb Ex-servicemen as ***Make in India agents***.

Stick To Basics For Simple Solutions

In the national interest, the fundamentals laid out by Goldratt have to be kept in mind for a win-win solution. ***Firstly:*** All people are good, only assumptions are inappropriate. ***Secondly:*** There are no blames. ***Thirdly:*** All complex problems have simple solutions. ***Finally:*** People within the system have to invent new solutions; they cannot be asked to comply.

What you think is not important;
What your people think you think, that's what really counts
E M Goldratt

Resting my faith in the firm commitment of today's leadership to bring all stakeholders together, I sincerely believe that India can create an environment where problems cannot exist.

Air Marshal PV Athawale, PVSM, AVSM, VSM (Retd)

Air Marshal Pramod Vasant Athawale was commissioned in 1973. He envisioned strategies with a paradigm shift and retired as Air Officer Commanding-in-Chief of Maintenance Command IAF in Aug 2011.

He is an Alumnus of IIT Roorkee and IIT Kharagpur.

Air Marshal had an opportunity to get maintenance experience on aircraft as well as Microwave Communication systems. A tenure each as aircrew, followed by Test Engineer at ASTE and later with Defence Standardisation made his experience well rounded and complete.

He pioneered software initiatives in IAF establishing the Software Development Institute of Air Force for real time avionics software work. The related systems' integration and networking projects came up as natural assignments for him. Integrated Air Command & Control System (IACCS) and Air Force Network (AFNET) were the two noteworthy projects launched by him.

Author of a book titled 'Indian Air Force: The Maintenance Paradigm', and many articles, his writings prompt a change in thinking.

South China Sea Conflict

Prof Ashok Soman

"We are strongly committed to safeguarding the Country's sovereignty and security, and defending our territorial integrity"
-Chinese President Xi Jinping.

"This is the future we seek in Asia –Pacific – Security, prosperity, and dignity for all –let there be no doubt in Asia Pacific in Twenty first century, the US of America is all in"
- US President Barack Obama.

Introduction

The South China Sea Conflict is between China, Taiwan, Vietnam, Malaysia, Indonesia, Brunei and Philippines. It having an area of 35,00,000 Sq Km (14,00,000 Sq mi)* (*Source: Wikipedia)*

The China is vigorously asserting itself even at a risk of antagonizing all neighboring nations, it does care for the claims of Exclusive Economic Zone (EEZ) of the neighboring nations. China hopes that with South China Sea control they will have an area which may be rich in oil/gas, which cannot be threatened by its adversaries at' Choke points'. China is concerned about its energy security which can be threatened at choke points at Strait of Hormuz (near Persian Gulf), or Gulf of Aden and creating bases in Gwadar and Djibouti

ISSN 2347-9191 print

CASS Journal, Vol. 3, No. 4, October–December 2016, pp. 87–104

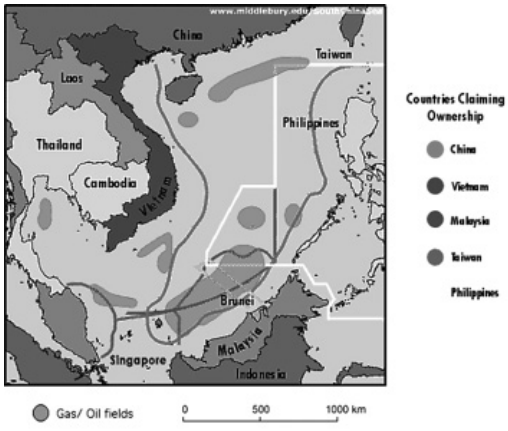
to protect it. It is especially worried about India's grip on Malacca Strait.

China is deeply concerned over its energy security as it has emerged as a biggest importer of Oil even surpassing USA, and has imported 7.85 Million Barrels per day* *(Source: Bloomberg news Jan 13 2016.)*

China is busy creating infrastructure on these disputed islands by constructing airstrips, installing radars and creating civilian infrastructure. It considers the almost entire South China Sea as a part of its Hainan province and its neighbors are too weak militarily and economically to challenge china.

China considerer's entire South China Sea as theirs, and has claimed most of it through a "Nine dot Line". There are various estimates of Oil and gas in the South China Sea. On higher side there are 11 Billion Barrels of oil, and 190 Trillion cubic feet of gas in the South China Sea.* *(Source: Council of foreign relations April 2015.)*

The low estimates of oil and gas are 2.5 Billion Barrels of oil equivalent, which means entire energy in South China Sea is sufficient to two years of Chinese imports.* *(Source: Wood Mackenzie estimate.)* China has imported 7.85 million barrels per day, which has made it biggest importer of oil in the world. However much of this oil may be going in reserves that China is building, especially taking advantage of lower prices of Crude.* *(Source: Bloomberg news Jan 13 2016.)*



Nine dotted line – note how it intrudes into EEZs of adjoining nations.

Both People's Republic of China (PRC) as well as Republic of China (ROC or Taiwan China) claims the entire South China sea as their own, demarking their claims to what is known as 'Nine dotted line'.

Importance of South China sea

- Trade -A phenomenal $5.3 Trillion trade passes through it.
- Oil - 11 billion Barrels of oil passes through it every year.
- Gas - 190 Trillion cubic feet of gas.
- Fossil fuels - It is estimated that 90 % of Middle east fossil fuels would pass

through South China sea to Asia by 2035.* *(Source: European Financial Review Feb 28 2014 by Abbas Kazemi and Xianming Chun.)*

Energy in disputed South China Sea

(*Source: Forbes Energy April 25 2016.)*

a) Vietnam – 3Billion barrels of Crude oil, and 20 Trillion Cubic Feet of gas.
b) Philippines – It has 0.2 Billion Barrels of Oil and 4Trillion Cubic Feet of Gas.
c) Malaysia – 5 billion Barrels of Oil and 80 Trillion Cubic feet of gas.
d) Indonesia – 0.3 Billion Barrels of oil and 80 Trillion Cubic feet of gas.
e) China – 1.3 Billion barrel of oil and 4Trillion Cubic Feet of Gas.

China's strategy is embark on Island building in Spratly and Paracel islands, this would strengthen their claim on the South china Sea even though much of the area is in Exclusive Economic Zone(EEZ) of Vietnam, Philippines, Brunei and Malaysia. It ignores the protests off these neighbors. USA is trying to assert its right of passage through South China Sea and Chinese deliberate strategy is only to protest and not create an incidence with US Navy or US Air force.

China is openly flouting the international norms of Exclusive Economic Zones.

Exclusive Economic Zone

Exclusive Economic Zone (EEZ) is a sea zone prescribed by the United Nation Convention on law of sea over which state has special rights regarding exploration and use of Marine resources, including Energy production, from wind, and sun.

It was adopted by United Nation convention of law of the sea that 200 nautical m les (370.4 Km) Exclusive Economic Zone (EEZ) was formerly adopted as Part V Article 55 of convention states.

Nation may not however claim small rocks or coral projections as territories under Article 121 (3) of UNCLOS (Mabasa 2013) but China disregards these.

In Jan 2013 Philippines has announced that it would be taking China to International Tribunal for the law of the Sea in order to pursue mediation through UN, however China has declared that it would not abide by its ruling.

It is concentrating on two groups of islands namely Paracel islands and Spratly islands.

Paracel Islands – It is roughly 7.75 Km (4.8 Sq Mi) are claimed both by China and Vietnam. China is having land reclamation projects called as

legitimate activity in its territory.* *(Source: Wikipedia.)*

Great Sand Wall of China - Since 2016 in South China Sea. It has built runways on Fiery Cross reef and Johnson South Reef. It is a name given to series of land reclamation projects undertaken by Chinese government particularly in Paracel islands and Spratly island group-in order to strengthen the claim by China in the region demarked by 9-Dash line. *(Source: Wikipedia.)*

China is giving pretext of improving the working and living standard of people in this area. China is aiming to provide shelter, aid in navigation, weather forecasts and assistance to fishing boats of various countries passing through the sea.

As per Janes a defense analyst these are methodical, well planned campaign to create a chain of sea capable fortress.

Geography

Major islands and reef formation in South China Sea are-

(Source: Wikipedia.)

Spratly Islands- These are cluster of more than 100 small islands and reefs that are less than 3.1 Sq Mi but are spread over 425,000 Sq Km. It has rich fishing grounds and oil/Gas deposits. It is claimed by China, Malaysia, Vietnam, and Philippines.

Fiery Cross the biggest reef in Spratly has been turned into biggest island. After reclamation it covers 1 Sq Km.

The distance between Fiery Cross and main land China is 740 Km. China has not done yet in Fiery Cross islands.

Distance between Vietnam and Spratly-

- Distance between Cam Ranh Bay to Spratly – 250 Km.
- Distance between Pahn Thiet to Spratly -280 Km.
- Distance between Hon Ha and Spratly – 210 Km.

Claimants to Spratly

- **Philippines –** It essentially claims only western section of Spratly Kalayaan islands which is assortment of 51 islands. It controls eight islands, with base on Thi'tu Island.
- **Malaysia –** it claims only three islands that it presently occupies.
- **Brunei –** It claims Louisa Reef which is one of the southernmost reefs. Its EEZ is unlikely to be challenged by China.
- **Vietnam –** It claims 25 islands with its main base at Spratly islands (Truony Sa).
- **China –** It holds eight islands.
- **Taiwan –** It has Itu Aba the largest island.

China is making airbases on Mischief islands which is 150 Km from Philippines but 600 Km from Hainan.

1) **Paracel Islands –** It is spread over 15,000 Sq Km.
2) **Pratap Islands**- There are three islands, with maximum of 14 M height and are controlled by Taiwan.
3) **Natuna Islands –** These are 272 islands off Borneo (Indonesia) with a population of 69,319 and a airstrip.
4) **Scarbourgh Shoal** - The current conflict between Philippines and China is due to Scarbourgh Shoal. It consists of unihibitated rocks, atolls, sandbanks, and reefs.

It has rich fishing grounds, and the reason why both China and Philippines want it. UNCLOS states that a sovereign nation has claim over the water reaching 200 Km from its coast.

China imports 8 Billion tons of fish but its demand would grow to $20 Billion in 2020. Philipines too is dependant for fish in Scarbough shoal. Its demand for 2010 was 2.9 million tons the demand is estimated to grow to 4.2 Million Tons by 2020.

Complexity of South China Sea Conflict

(Source: Global Security Org Nov 7 2011.)

Each claimant nation is trying to reinforce its claim based on some or all of the following factors -Historical evidence, archeological evidence, Continental Shelf/Exclusive Economic Zone (EEZ), physical occupation, making it a part of its neighboring province/municipality, renaming the islands or constructing infrastructure like city, port, military installation or hotels.

The claimants mainly China have used physical force to evict the occupants.

Territorial Claims of various claimants in Spratly and Paracel Islands

1) **Brunei-** Does not claim any of the islands, but claims part of South China Sea as nearest to it as part of its continental shelf and EEZ. In 1984 Brunei declared an EEZ that includes Louisa reef.

2) **China –** Refers to Spratly Islands as 'Nausha Islands' and claims all the islands and most of South China Sea for historic reasons. These claims are not marked by coordinates or otherwise clearly defined.

The claims are based on a number of Historical events including the naval expedition to Spratly islands by Han Dynasties in 110 Ad and Ming dynasties in 1403 to 1433AD.

China is using Archeological evidence to bolster its claim of sovereignty. In 19th and 20th century China asserted its claim to Spratly and Paracel islands. During the WWII these islands were occupied by Japan. In 1947 China produced a map with 9 undefined dotted lines and claimed all of the islands within those lines. A 1992 Chinese law restarted these claims in the region. China has occupied some islands. In 1976 China enforced its claims upon Paracel islands by seizing it from Vietnam. China refers to Paracel islands as Xisha islands and includes them as part of Hainan province.

China controls following islands

i) Cuateron Reef.
ii) Fiery Cross Reef.
iii) Gaven Reef.
iv) Huges Reef.
v) Johnson Reef.
vi) Mischief Reef.
vii) Subi Reef.

3) **Indonesia-**It is not a claimant to any of the Spratly Islands. However Chinese and Taiwanese claims in South China Sea extend to Indonesian EEZ and Continental Shelf, as well as Natua gas fields. Indonesia has declared that the part of South China Sea adjust to it will be called Natua Sea.

4) Malaysia – Its claims are based upon continental shelf principle and have closely defined coordinates. Malaysia has occupied islands that it considers to be within its Continental Shelf.

Malaysia has tried to build one atoll by bringing soil from mainland.

Malaysia controls following Islands in Spratlys

- **Ardasier Reef** (Terumba Ubi).
- **Mariveles Reef** (Terumbu Mantanani).
- **Swallow Reef** (Terumbu Layemg).

5) Philippines – Its Spratly claim has well defined coordinates based upon proximity principle, as well as exploration of Philippines by explorer in 1956. In 1956 Philippines officially claimed eight islands that it refers as Kalayan partly on the basis of this exploration that-

i) These islands were not a part of Spratly Islands.
ii) These islands had not belonged to anybody and were open to be claimed.
iii) In 1972 they were designated as part of Palwan province, Kalayan Municipality. The total area of these Islands is 790,000 meters.

Philippines controls following Spratly Islands

- Kota or Loaita Island.
- Lawak or Nanshan Islands.
- Likas or west York Islands.
- Panata or Lamkian Cay.
- Pag-asa or Thitu Islands.
- Parola or Norath East Islands.
- Rizal or Commodore Reef.
- Patag or Flat Island.

6) Taiwan – Taiwanese claims are based on Continental Shelf Principle. As with China, Taiwan claims are also not clearly defined.

Taiwan controls in Spratly

- Atu Abu (Taiping Dao), the single most largest island in Spratly.

7) Vietnam – its claim is based upon Continental Shelf Principle. Vietnam claims the entire Spratly Islands as an offshore District of province of Khanh

Hoa. It also claims an extensive area of South China Sea, although it is not clearly defined.

The Vietnamese have followed Chinese example of using Archeological evidence to bolster its claims. In 1930's France claimed the Spratly and Paracel Islands on behalf of then –Colony Vietnam. Vietnam has occupied number of Spratly Islands. in addition, Vietnam claims of Paracel Islands, although they were seized by China in 1974.

Vietnam controls 21 Islands, reefs, shoal and Cays

- Alison Reef.
- Amboyam Reef.
- Barque Canada Reef.
- Centrallondon Reef.
- Cornwallis South Reef.
- Da Gri- San.
- Da hi Gen.
- East London Reef.
- Great Discovery Reef.
- Ladd Reef.
- Landsdowne Reef.
- Namyit Islands.
- Person Reef.
- Petley Reef.
- Sand Cay.
- Sin Cowe Island.
- South Reef.
- South West Cay.
- Spratly Island.
- Tenant Reef.
- West London Reef.

Brunei the smallest contestant in South China Sea conflict

Brunei's claims are based on Exclusive Economic Zone (EEZ). India has offered retired Gurkha soldiers to replace three battalions of Royal Army (British) Gurkha during the visit of vice president Mohammad Hamid Ansari, even though British Prime Minister Mr Cameron has already extended their tenure of the three Battalions by five years.

Events in South China Sea

In May 2014 China began drilling operation with mobile oil rig Haiyang Shiyou 981 near Paracel islands.

The Oil rig is owned by giant energy company China National Offshore Corporation (CNOOC) was sent to a location 120 Km from Vietnamese coast (Inside Vietnam's EEZ) and 17 Km from Triton islands. The oil rig was escorted by 40 Chinese maritime assets as well as other units of Chinese armed forces.

The drilling operations were opposed by Vietnam and a fleet of Patrol vessels was sent. In the standoff one Vietnamese fishing vessel sank.

After this event there were riots in Vietnam and thousands of rioters had to be apprehended. It also resulted in thousands of Chinese fleeing Vietnam for safety. *(Source: Lawforce by Sean Mirski, Jun 8, 2015.)*

In 2012 China created Sansha City, an administration body having its Headquarters in Paracel islands this angered both Vietnam as well as Philippines.

Great Wall of self isolation

(Source: PTI Economic Times May 28 2016.)

In a speech in front of graduation ceremony in Maryland US Defense secretary Ashton Carter warned "China has taken some expansive and unprecedented actions in South China Sea, pressing excessive maritime claims contrary to international law. Its construction and subsequent militarization far surpasses all other land reclamation by other nations. It poses a great risk to the region's prosperity and could create a "Great Wall of self isolation".

Recent incidences in South China Sea

(*Source: BBC Questions and answers Oct 27 2016.)*

i) China seized Paracel islands from Vietnam in 1974 and killed more than 70 Vietnamese troops.
ii) In 1988 Vietnam and China again clashed and Vietnam lost 60 sailors.
iii) In May 2014 introduction of drilling ship led to multiple collision between Vietnam and Chinese ships.
iv) In year 2015 it was revealed that China is building an airstrip on reclaimed land.
v) Indian Navy's warship INS Airawat a Shardul Class landing ship on Jul 22 2011 sailed from Nha Trang port in South Central Vietnam towards Haiphong. It was buzzed on open radio channel.

The caller identifying himself as belonging to Chinese Navy asked the Indian ship to be identified itself, and warned "You are entering Chinese waters and ordered "Move out of here". However there was no Chienese ship on the horizon or radar.

INS Airawat did not respond or identify and continued its way.

In a statement Ministry of External affairs was strongly critical of China saying "India supports freedom of Navigation in the international waters including in South China Sea and Right of passage in accordance with accepted principles of International Law.

vi) US navy guided missile destroyer USS William s. Lawrence navigated within 12 NM of a Nautical feature Fiery Cross Reef--- Source wall Street Journal May 11, 2016 by Gordon Lubold and China Daily May 11, 2016 by Wang Qingyun.

Beijing expressed its resolute opposition to a patrol when a US warship in South China Sea near Yangsha Reef in Nansha Island.

The USA has frequently demonstrated its military power in South China Sea include US air force B-52 Bombers flying near Huayang reef in Dec 2015 and USS Lassen entering within 22 Km of Zhuki Reef in Oct 2015.

Chinese defense ministry said China has dispatched vessels and aircraft including two fighter jets and three warships and warned it to leave.

In a ASEAN Regional Forum (ARF) retreat Preneet Kaur had stressed Freedom of navigation fundamental right in year 2011.--- Source Times of India Sep 2 2011 Indrani Bagachi.

vii) Malabar exercise off South China Sea was launched along with USN, Japanese Navy, and Indian Navy. It is having about 100 warships including aircraft carrier, helicopter carrier, and nuclear submarines. US navy has USS John c. Stennis aircraft carrier and Ticonderoga class Cruiser USS Mobile Bay and USS Arleigh Burke class destroyers USS Stockdale and USS Chung Hoon all carrying helicopters.

Japan has sent Huaga class helicopter along with other warships.

Malabar exercises displaying might of US Navy.

Indian Navy has sent INS Satpura,INS Sahyadri, INS kirch and oil tanker Shakti. *(Deccan Herald Jun18 2016.)*

Cost of South China Sea Conflict

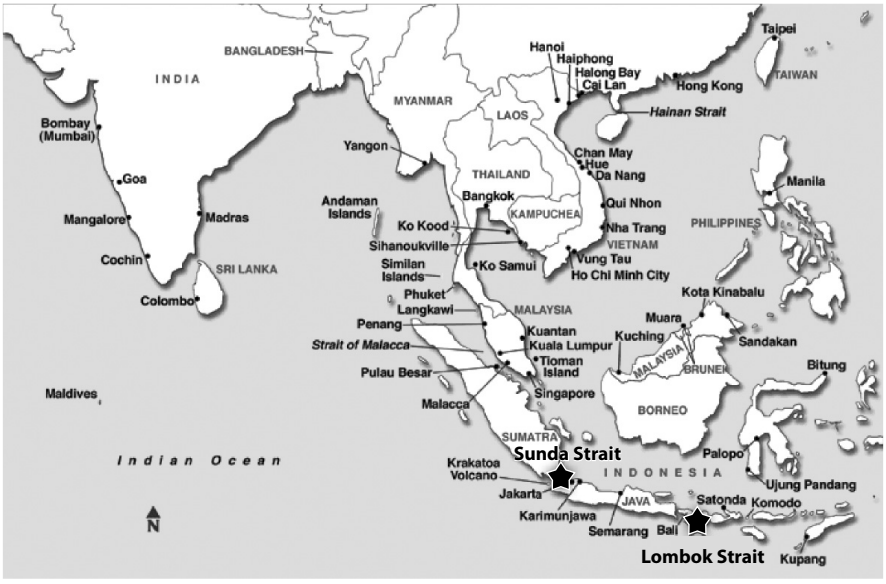
The nations affected by South China Sea conflict Philippines, Brunei, Vietnam, are taking the route for their merchant ships outside the' 9 –dotted line' and restricting themselves to their coastal waters.

The countries most affected are Japan and South Korea; they are sending their ships through Lombak Strait or Sunda Strait. This causing them extra burden of $200 Million for Japan and $270 Million for South China.

(Source: Asia Times –Peter Lee Jan 27 2016.)

Implications of South China Sea Conflict to India

ONGC Videsh was offered two blocks in deep sea called as Block 127 and Block 128. They have an area of 7,058 Sq Km in offshore Phu Khanh Bay. Both the blocks are outside the South China Sea disputed area. However the prospects of getting oil in commercial quantity are low.



Alternative to passing South China Sea for Japan is to pass through Lombok sea (Near Bali islands). It is also a route for China if they want to avoid Malacca Strait.

Passage through South China Sea

a) India's trade with Japan, South Korea and Philippines etc, passes through South China Sea, in addition Airbases and Ports being developed for the Chinese Armed forces pose a threat to the free world trade.

b) India is going supply Vietnam with Kamorta class anti submarine Corvettes and negotiations are going on. A further massive soft loan in addition to $100 million would help to clinch the deal. The deal must be struck up in a short time, otherwise Vietnam and Philippines who do not have much naval assets will be bullied into submission. They should be provided these warships on lease if required, till their ordered warships are ready. Similarly Survey ships should be sold if required on an urgent basis.

c) The visit of Indian Defense Minister Mr Manohar Parrikar along with delegation of industry such as Larsen and Toubro is of particular significance. India has offered 'Brahmos' missiles to Vietnam which would prove to be the game changer.

d) We can also offer them Offshore Patrol vessels of Samarth and Sankalp class and Fast patrol ships to ensure that these nations have adequate surveillance

capacity. As of now the nations near South China Sea adequate capacity to take on Chinese armed forces militarily and are near helpless, the fact that China is taking advantage. India must assert the right of passage through South China Sea for its warships and merchant ships and China will not attack them but will limit their action to warnings only.

e) India should enter ASEAN block as soon as possible.

f) Almost all ASEAN countries are affected in South China Sea conflict. If ASEAN countries can come together on this issue diplomatically and impose trade barriers to match encroachment on conflict nations, it will affect Chinese trade, which is their major concern.

g) Exercises off South China Sea and East China Sea should be continued, along with Japan, USA and Australian Navies.

i) India should improve its trade ties with Taiwan, Japan and South Korea these countries have high technology which is required by India.

China's Military might in South China Sea and in Hainan

China has a massive naval base in Hainan for its nuclear submarines, it is an underground base capable of hiding 20 nuclear submarines. It is large enough to accommodate aircraft carriers.

Other than bases in main land China and especially in Hainan islands, China can base its aircrafts, missiles and ships in South China Sea bases as under-

1) Y-8 Patrol aircraft- if these 4 Engine turbo craft aircraft based on artificial island would enable China to conduct maritime surveillance within 2500 Km operational combat range.

2) J-11 Air Superiority Fighter jet- This is based on SU -27 aircraft built under license and is modified as J-11. It will allow China to intercept and destroy any civilian and military air traffic in an operational combat radius of 1500 Km.

3) VJ -18 Anti Ship Cruise missile - If these are based in any islands, China will be able to attack commercial and military vessels 540 Km away.

4) S-400 Surface to air missiles – China's Russian made surface to air Missiles would be able to deny or destroy any Civilian or Military traffic up to 400 Km away.

5) H-6 Strategic Bomber. It has anti ship missiles and can fly at 1050 Km per hour. It has a range of 6,000 Km, and has air to air refueling capacity. China has 120 of them in service. It is based on Tu-16 bomber and made under license by Xi'an Industrial Corporation. *(Source: Wikipedia.)*

Position of China in South China Sea

The foreign policy analysts in Washington state that China has mastered the ability to take incremental steps that fall short of provoking a major international incidence by taking territory piece by piece. It is silently creating infrastructure, constructing airstrips and trying to create strong position to dominate the South China Sea.

Ninth design and Research Institute of State run China State Shipbuilding Corporation indicates that PLA plans to build six islands and reefs.

It is constructing an airfield as Johnson South reef which is 3200 Km from Northern Coast of Australia.

From that base PLA Strategic Bombers H-6 can reach Australian coast as they have 1800 Km combat range and midair refueling capacity. *(Source:Wikipedia.)*

Airstrip comparison in South china Sea: Clear advantage China *(Source: Google)*

- **Spratly Island** (Vietnam) - 500 Meters. It can be used for Cargo planes and Surveillance aircrafts.
- **Thitu Islands** (Philippines) - 1,000 Meters, It can handle Cargo planes, Surveillance planes and Fighter jets.
- **Itu Aba** (Taiwan) - 1195 Meters. It can be used by Cargo planes, Surveillance aircrafts, and fighter jets.
- **Fiery Cross Reef** (China) – 3,000 Meters, It can handle Cargo planes, Surveillance aircrafts, fighters and Bombers.

USA the superpower that has Military, Diplomatic, Economic power to stop further occupation of South China Sea islands

USA has bases near South China Sea and in East China Sea. It has made a deal with Philippines in second week of March that will allow USA to deploy conventional forces for the first time in decades in Philippines.

The deal with Philippines is called 'Enhanced defense cooperation agreement'. It will allow USA to use five military airbases at Antonio Bauta Airbases, Bas airbase, Fort Magsaysay airbase, and Lumbia Airbase.

USA is taking South China Sea very seriously as per USA spokesman John Kirby.

US defense secretary Mr Ashton Carter in a key note speech in ongoing Shangri-la dialogue stated that his country will continue to fly, sail, and operate in the region wherever international law allows. *(Source: Xinhua China daily May 31 2015.)*

China rejected Mr Ashton Carter's accusation that Chinese action is 'out of step' with international rules. *(Source: Xinhua May 31 2015.)*

Response of China's foreign ministry was a six point assertion of China's future actions in South China Sea. *(Source: China Daily May 31, 2015.)*

Options for the South China Sea nations

i) **ASEAN and USA** are having maximum chance of getting China on negotiation table, before negotiations China will create as much infrastructure as is possible to be in a strong position.

ii) **USA,** Japan, Australia, South Korea and India along with ASEAN nations can put economic pressure like sanctions on China.

Bilateral Trade of China with above nations in Billions of US Dollars in 2014.

- USA: 521 Billion Dollars.
- ASEAN: 440 Billion Dollars.
- Australia: 136 Billion Dollars.
- South Korea: 274 Billion Dollars.
- Japan: 312 Billion Dollars.
- India: 80 Billion Dollars.

China will be reluctant to face economic sanctions by above nations as it is more than 1,763 Billion US Dollars worth of Business. It is best way to bring a negotiated settlement with China. It can bring China, the economic hardships which Russia is facing over Ukrain.

iii) **Emergency sessions in UNO –** These will have limited use as China can use Veto power.

Limited action - USA has already sent signals by sending its warships in South China Sea. It has a strong pact with Japan which will be used if there is a confrontation in East China Sea and a somewhat weak pact with Philippines. Nations surrounding South China Sea are having weak navies and airforce as compared to China and are in no position to challenge them.

International Tribunal - Philippines had taken China over South China Sea to a International tribunal by filing a lawsuit against China's claims in South China Sea and won the case. However China has declared that it won't accept tribunal's ruling.

Conclusions

India must carefully watch the situation in South China Sea. It is having an area of 35,00,000 Sq Km (1,40,000 Sq miles). It is rich in Oil/Gas and has fish in great quantity. India should help the nations adjoining the South China Sea financially and militarily so that they come out of current helpless military situation. Ultimately USA which will shift 60% of its Navy to Pacific by year

2020 will have to play an important part along with Japan and Australian Navies.*(Source: Defense secretary Leon Panetta statement.)*

Strategic importance of South China Sea to India: More than half of the world's fleet tonnage passes through Malacca Strait, Sunda Strait and Lombak Strait. The Tanker traffic is more than three times greater than Suez canal and five times greater than Panama Canal.

India must use its traditional ties with Russia to ensure that Russia protects India's and South China conflict nations interests in this crcicial zone.

China will react to India's interest in South China Sea by intruding in Arunachal Pradesh and/or Ladakh if Indian Navy continues to take part in Exercises near South China Sea or East China Sea. India has capability to improve infrastructure in Arunachal Pradesh which can produce more than 60,000 MW of hydropower at the same time participate in Exercises in South and East China Sea.

Last but not the least new 'Choke points ' of the world are Sunda Strait, Lombak Strait. India must try to get few bases near them so that these 'Choke Points ' are kept open for global shipping.

Prof Ashok Soman

Prof. Ashok Soman served as a lieutenent in Indian Navy and participated in Bangladesh War. After retirement, he turned a Management Guru and has over 47 years of experience in teaching and training.

He is associated with several national and international educational institutes in the capacity of a professor. He is one of the founder faculties at Symbiosis Institute of Management Studies (SIMS), Pune. He also teaches at Osaka Gakuin University, Japan; Khimji Training Institute - KTI, Oman and at Savitribai Phule Pune University's Ras al-Khaimah, UAE campus. He has also taught in Air Force Intelligence Academy and Defence Institute of Advanced Technologies.

He is associated with over 80 corporates as a Management Development Programme (MDP) trainer. He teaches senior officers in Yashwantraon Chavan Academy of Development Administration (YASHADA, Pune).

He has 3 books to his credit.

Radiological Dispersal Devices (RDD): Threat Perception and Counter Measures

Lt Col (Dr) Tushar Ghate

Introduction

Terrorism is a well planned sequential act executed to achieve mainly political goals. Killing people by unleashing deadly lethal activities is a very primitive aim of the terrorist organizations, wherein the primary focus remains towards polarization and weakening the social fabric of the society. The separation of the society takes place in three categories. One section gets 'convinced' by the philosophy of the organization that results in strengthening the terrorist organisations and further highlight the 'cause.' Second section remains unbiased and wows to fight this propaganda. However, these two sections form a very less percentile of the society. The most vulnerable is 'terrorized section of the society.' Majority of people form part of this. It is easy to exploit and terrorize people. Terrorist organizations look for unconventional ways to imprint terror on the mindsets of the people that remains persistent.

Use of Chemical, Biological, Radiological and Nuclear (CBRN) agents in terrorist activities is not a mere threat but proven fact. With change in dimensions and philosophy of terrorist organizations, these activities are stretching pan-border. With this, there is an inevitable need of the day to address this menace in a holistic and coordinated manner.

ISSN 2347-9191 print

CASS Journal, Vol. 3, No. 4, October–December 2016, pp. 105–116

Nuclear fissile material used in nuclear reactors and radioactive material used in commercial and research industries are two main potential sources that can be used in terrorist activities in form of Radiological Dispersal Device (RDD).

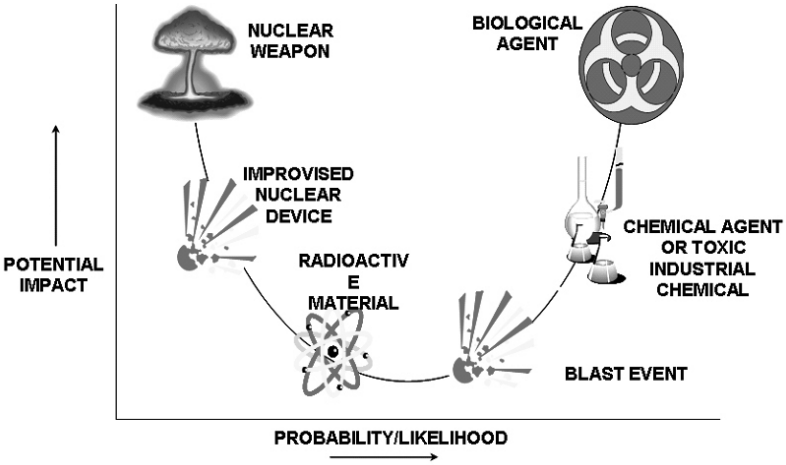
A "Radiological Dispersal Device (RDD)" or Dirty Bomb is high explosive such as RDX that has been combined with radioactive material, which scatters when it goes off. It kills or injures peoples through the initial blast of the conventional explosive and also result in spread of radiation and contamination in the nearby region and in the downwind direction. It can be of almost any size. ***RDD is not a nuclear weapon*** as nuclear weapons involve complex fission reactions and are significantly more devastating. It is more appropriate to refer RDDs, as weapons of "mass disruption" that can spread fear and disrupt daily life. These weapons are for terror. They create psychological fear and also result in economical damage, due to release of various activities in the affected region and thereby requiring decontamination or demolition of structures in the affected areas. The likely radioactive ingredients for these devices Cesium, Cobalt and Iridium isotopes are widely used for industrial and medical purposes and are easy to come by.

Experts on international terrorism believe that the threat from radiological weapons is real and growing. Observers also have an understanding that the resources and expertise required to develop or acquire such weapons are already existing and spreading very fast amongst various terrorist organizations. As a result, the possibility of terrorists assembling the RDD or radioactive IED, a crude radiological weapon, which would probably use long-lived radioactive waste or nuclear fuel, is quite eminent.

Background

The radiation produced by radioactive materials provides a low-cost way to disinfect food sterilize medical equipment, treat certain kinds of cancer, locate oil, build sensitive smoke detectors, and provide other critical services in our economy. Radioactive materials are also widely used in universities, corporate, and government research laboratories. As a result, significant amounts of these materials are stored in laboratories, food irradiation plants, oil drilling facilities, medical centers, and many other sites. Access to radioactive materials by terrorist cannot be denied as the security of these materials is ensured by local agencies.

MANMADE DISASTER: POTENTIAL PROBABILITY VS. IMPACT



Threat Analysis

Radiological attacks constitute a credible threat. Radioactive materials that could be used for such attacks are stored in thousands of facilities around the world, many of which may not be adequately protected against theft by determined terrorists. Some of this material could be easily dispersed in urban areas by using conventional explosives or by other methods.

- While radiological attacks would result in some deaths, they would not result in the hundreds of thousands of fatalities that could be caused by a crude nuclear weapon. Attacks could contaminate large urban areas with high radiation levels.
- Materials that could be easily stolen from international research institutions and used in Dirty Bombs can contaminate crowded and important areas of the city at a level that would require prompt evacuation. Areas as large as tens of square Kilometer can be contaminated at levels that exceed recommended civilian exposure limits. *Since there are often no effective ways to decontaminate buildings that have been exposed at these levels, demolition may be the only practical solution. If such an event were to take place in a city like Mumbai, it would result in losses of potentially thousands of crores of Rupees.*
- Important places like railways stations, crowded markets, religious places, Government establishments like parliament, assembly houses are most vulnerable targets. Terrorists will plant and explode multiple Dirty Bombs

here and also announce the same in public. This will result in stampedes and commotions which will make security agencies difficult to control the situation. Till the time these installations and places are not decontaminated, it cannot be opened to the public. For example, CST railway station in Mumbai, stock exchanges, parliament house remaining shut down even for weeks will have severe economical psychological and political effect.

Potential sources of RDD

Russian Spent Marine Fuel as a Global Security Risk

Russian marine fuel is a trans-national security concern. Russian fresh fuel for marine reactors has been involved in several significant cases of illicit trafficking of special nuclear materials. The amount and quality of nuclear materials in Russian spent marine fuel give also reason for concern. Not less than 200 marine reactor cores keep changing their spent fuel, unloaded and preliminary stored on shore in the far East and North West of Russia. This spent fuel is potential source for RDD.

Other Sources

The main potential sources of RDD are Hospital radiation therapy(Cobalt-60, Cs-137), Radio Pharmaceuticals (I-123, Technnetium-99/ Thalium-201), laboratories and radiography and gauging(Co-60, Cs-137, Ir-192)

Possible Terrorist scenario Involving the Use of Radioactive Materials

Use of Iridium-192 source available in industrial radiography cameras

These cameras are used in large numbers all over the country for the purpose of Non Destructive Testing (NDT) in the industry. Each camera would have a radioactive source with the strength of 60 Ci. Terrorists can steal one or more cameras, extract the source, combine it with conventional explosives and explode it as a normal explosion device.

Usage of Co-60 source available in Teletherapy Units

Example 1- Cesium (Gamma Emitter)

Imagine that the cesium in this device was exploded in Mumbai, in a bomb using ten five Kgs of High Explosives such as RDX. The blast effect will claim the initial casualties and also spread the Cesium activity along with the dust in the nearby area. This will have deterministic effects like vomiting, nausea among the people coming in contact with radioactive dust. These apparent effects will further spread fear psychosis.

Example 2 - Cobalt (Gamma Emitter)

Now imagine if a single piece of radioactive cobalt from a food irradiation plant was dispersed by an explosion at the lower tip of Mumbai. Typically, each of these cobalt "pencils" is about one inch in diameter and one foot long, with hundreds of such pieces often being used in the same facility. Acquisition of this material is less likely than in the previous scenario, but we still consider the results. No immediate evacuation would be necessary owing to spread of radioactivity, but in this case, large area would be contaminated. The entire area of Mumbai would be so contaminated that anyone living there would have a one-in-a-hundred chance of dying from cancer caused by the residual radiation. To tackle this situation, large amount of demolition might be necessary.

To summarize the first two examples, materials like Cesium, Cobalt, Iridium, and Strontium (gamma emitters) would all produce similar results. Long-term contamination would require abandonment of large urban areas, resulting in severe economic and political effects.

Example 3 - Americium (Alpha Emitter)

A device that spread materials like Americium and Plutonium would create an entirely a different set of risks. Consider a typical Americium source used in oil well surveying. If this were blown up with one Kg of RDX, people in a region roughly ten times the area of the initial bomb blast would require medical supervision and monitoring, After the initial passage of the cloud, most of the radioactive materials would settle to the ground. Of these materials, some would be forced back up into the air and inhaled, thus posing a long-term health hazard.

Present Security

With the exception of nuclear power reactors, commercial facilities do not have the types or volumes of materials usable for making nuclear weapons. Security concerns have focused on preventing thefts or accidents that could expose employees and the general public to harmful levels of radiation. Anti National Element (ANE) or even thief might, for example, take the material for its commercial value as a radioactive source, or it may be discarded as scrap by accident or as a result of neglect. This system works reasonably well

when the owners have a vested interest in protecting commercially valuable material. However, once the materials are no longer needed and costs of appropriate disposal are high, security measures become lax, and the likelihood of abandonment or theft increases

Concern about the intentional release of radioactive materials changes the situation in fundamental ways. There is a need to wrestle with the possibility that sophisticated terrorist groups may be interested in obtaining the material and with the enormous danger to society that such thefts might present.

Significant quantities of radioactive material have been lost or stolen from nuclear related facilities during the past few years and thefts of foreign sources have led to fatalities. In the US, sources have been found abandoned in scrap yards, vehicles, and residential buildings. In September, 1987, scavengers broke into an abandoned cancer clinic in Goiania, Brazil and stole a medical device containing large amounts of radioactive Cesium. An estimated 250 people were exposed to the source, eight developed radiation sickness, and four of them died. At large in most cases, the loss of radioactive materials has resulted from an accident or from a thief interested only in economic gain. *In 1995, however, Chechen rebels placed a shielded container holding the Cesium-137 core of a cancer treatment device in a Moscow park, and then tipped off Russian reporters of its location.* This can be termed as first of its kind of incidents in which the terrorists were succeeded in placing an actual RDD.

Health Risks

Gamma rays pose two types of health risks. Intense sources of gamma rays can cause immediate tissue damage, and lead to acute radiation poisoning. Fatalities can result from very high doses. Long-term exposure to low levels of gamma rays can also be harmful because it can cause genetic mutations leading to cancer. Triggering cancer is largely a matter of chance: the more radiation one is exposed to, the more often the dice are rolled. The risk is never zero since we are all constantly being bombarded by large amounts of gamma radiation produced by cosmic rays, which reach us from distant stars. We are also exposed to trace amounts of radioactivity in the soil, in building materials, and other parts of our environment. Any increase in exposure increases the risk of cancer. Alpha particles emitted by plutonium, americium and other elements also pose health risks. Although these particles cannot penetrate clothing or skin, they are harmful if emitted by inhaled materials. If plutonium is inhaled, contaminated particles can lodge in the lung for extended periods. Inside the lung, the alpha particles produced by plutonium can damage lung tissue and lead to long-term cancers.

People will be exposed to radiation in following ways after RRD blast.

- First, they will be exposed to material in the dust inhaled during the initial passage of the radiation cloud, if they have not been able to escape the area before the dust cloud arrives. We assume that about 20% of the material is in particles small enough to be inhaled. If this material is Plutonium or Americium (or other alpha emitters), the material will stay in the body and lead to long term exposure.
- Second, anyone living in the affected area will be exposed to material deposited from the dust that settles from the cloud. If the material contains cesium (or other gamma emitters) they will be continuously exposed to radiation from this dust, since the gamma rays penetrate clothing and skin. If the material contains plutonium (or other alpha emitters), dust that is pulled off the ground and into the air by wind, automobile movement, or other actions will continue to be inhaled, adding to exposure.

Indian Government has a series of recommendations for addressing radiation related sabotage / accidents. Immediately after the attack, authorities would evacuate people from areas contaminated to levels exceeding these guidelines. People who receive more than twenty-five times the threshold dose for evacuation would have to be taken in for medical supervision.

In the long term, the cancer hazard from the remaining radioactive contamination would have to be addressed. Typically, *if decontamination could not reduce the danger of cancer death to about one-in-ten-thousand, the Department of Atomic Energy (DAE) would recommend the contaminated area be eventually abandoned.* Decontaminating an urban area presents a variety of challenges. Several materials that might be used in a radiological attack can chemically bind to concrete and asphalt, while other materials would become physically lodged in crevices on the surface of buildings, sidewalks and streets. Options for decontamination would range from sandblasting to demolition, with the latter likely being the only feasible option. Some radiological materials will also become firmly attached to soil in city parks, with the only disposal method being large scale removal of contaminated dirt. In short if there is high risk in the area that is contaminated by a radiological attack, that area would have to be deserted.

The Practicality of RDD (Dirty Bombs)

To kill or sicken a large number of people would require a relatively large weapon with highly radioactive material. A truck bomb, for example, with 220 kilograms of explosive and 50 kilograms of one-year-old spent fuel rods

could produce a lethal dosage zone with a radius of about one kilometer. Detonating such a device in an urban area with a large, unsheltered population might contaminate thousands of people or more. Although producing such a weapon is far easier than building a nuclear bomb, fabricating a highly effective radiological dispersal device that could easily be transported to its target would be difficult. Among the problems in building such a large device is the heavy shielding required to work with a significant amount of highly radioactive material. Otherwise, it would melt the carrying containers and sicken or kill anyone attempting to assemble or transport the weapon. For example, one assessment concluded that sufficient radioactive material to contaminate 230 square kilometers would require about 140 kilograms of lead shielding. While such weapons will be difficult for most terrorists, the idea of martyrdom could lead some to disregard the dangers.

Distributing radiological material as a fine aerosol (the ideal molecule size being about one to five microns, a fraction of the width of a human hair) would require some degree of specialized knowledge and specialized handling and processing equipment to mill the radioactive agent and blend it with an inert material to facilitate dispersion and increase the risk of inhalation.

Many variables can significantly affect the effectiveness of an attack: the distance from the radioactive source; the manner of dispersal; weather conditions (extent of dispersal); the degree of protection (e.g., buildings and overhead cover); and the type of radiation. For example, Alpha particles--one type of radiation--travel only a short distance, and most will not penetrate the dead, outside layer of skin. They are harmful, however, if inhaled or swallowed. Beta particles can penetrate the skin and inflict cellular damage, but they can be blocked by common materials such as plastic, concrete, and aluminum.

In contrast, gamma rays and neutrons are far more powerful and do not lose energy as quickly as alpha and beta particles when they pass through an absorber like clothing or walls. Heavy lead shielding, great amounts of other shielding with absorbent or scattering material (e.g., several feet of earth or concrete), or significant distance (perhaps kilometers) may be required to avoid high-dose exposure.

Unlike nuclear weapons, a radiological dispersal device does not require plutonium or enriched uranium. It requires only some form of radioactive material, which any nuclear reactor is capable of producing. In addition, numerous medical and industrial practices employ radioactive substances. However, obtaining these less dangerous materials associated with industry and

the medical field would be easier than obtaining the more dangerous materials that result from nuclear power production.

Illicitly obtaining these materials is not impossible. Most of the nations have stringent guidelines on storage, transportation and handling of radioactive materials. However this is not followed by rogue nations and results in large quantities of dangerous radioactive material remain unaccounted for.

Planning Response to Emergencies

Due to the enhanced safety features incorporated in the design of Indian nuclear reactors and the strict adherence to safety procedures during the operation of our nuclear facilities, probability of accidents leading to large quantities of radioactivity affecting members of the public is extremely small. In spite of this fact, DAE has established its own emergency control centers and emergency response mechanism to have an effective response in case of any radiation emergency situation. Periodic emergency exercises are conducted at by DAE to test the coordination between various response agencies and implementation of various emergency measures if an emergency situation arises due to any major accident in any of the facilities.

In case of a nuclear / radiological accident / sabotage, the prime concern will be the health and safety of the public. Since such incidents can lead to radioactive contamination of the environment, a very detailed emergency preparedness plan is in place to ensure that appropriate measures are taken to prevent damage to the men, material and the environment.

The emergency preparedness plan involves different agencies like DAE, National Disaster Management Authority (NDMA), state authorities etc. The plan in nutshell comprises of the following:-

- A quick and reliable monitoring methodology to detect the onset of an emergency condition,
- Rapid and continuous assessment of the accident / sabotage as it proceeds.
- Respond quickly and mobilise the resources at a short notice,
- Coordination for communication to agencies like fire fighting, medical, police etc.
- Intervention levels for protective action,
- Action levels for withdrawal of specific supplies of food and drinking water and for temporary relocation of the exposed persons
- Initiation of the counter measures at the earliest
- Assistance to the affected group of people

Likely Impact of Dirty Bomb (RDD)

The impact of a successful dirty bomb attack on those who do not receive an immediately lethal, incapacitating dose of radiation is difficult to predict. Even the largest radiological dispersal device is likely to inflict catastrophic casualties only if long-term cancer risks are considered. Prompt modern medical treatment can dramatically improve survivability after radiation injury for individuals who do not receive an initial, lethal dose of radiation. In particular, dramatic medical advances have been made in caring for individuals with suppressed immune systems, a common byproduct of radiation attack.

However, the danger of low-dose exposure from a radiological weapon is quiet eminent. The long-term effect of low-dose radiation is determined by the capacity of irradiated tissue to repair DNA damage within individual cells, which is governed by a number of exposure, health, and genetic factors. This effect neither can be predicted or detected.

Also, due to public fears of radiation, an attack might have a considerable disruptive effect--forcing mass evacuations, creating economic chaos, and inflicting environmental and property damage and significant cleanup costs. Goiânia, incident mentioned earlier required a massive environmental cleanup. Thus, radiological release that is intentional and associated with a terrorist attack would undoubtedly have a psychological effect disproportionately greater than the actual physical threat.

In RDD treat, fear factor is a major component. A radiological strike, in which the fear of the unknown might be particularly acute, could trigger severe and widespread reactions, including mass hysteria and serious psychological casualties.

Recommendations

A number of practical steps can be taken that would greatly reduce the risks presented by radiological weapons. Some recommendations are listed as under:

1) Reduce opportunities for terrorists to obtain dangerous radioactive materials with proactive intelligence.
2) Install early warning systems to detect illicit movement of radioactive materials in form of area monitors and network the same to assess the levels of suspected moving radioactive source.
3) Strict monitoring across borders.
4) Ensure accountability of the sources used in laboratories, institutes (especially spent sources).

Radioactive materials facilitate valuable economic, research and health care technologies. Measures needed to improve the security of facilities holding dangerous amounts of these materials will increase costs. In some cases, it may be worthwhile to pay a higher price for increased security. In other instances, however, the development of alternative technologies may be the more economically viable option. Specific security steps include the following:

- **Fully fund material recovery and storage programs.** Hundreds of plutonium, americium, and other radioactive sources are stored in dangerously large quantities in laboratories and other facilities. When these materials are actively used and considered a valuable economic asset, they are likely to be well protected. But in all too many cases they are not used frequently, resulting in the risk that attention to their security will diminish over time.
- **Expanded use of radiation detection systems.** Systems capable of detecting dangerous amounts of radiation are comparatively inexpensive and unobtrusive. Some have already been installed in critical locations in cities, at border points and throughout the country. High priority should be given to key points in the transportation system, such as airports, harbors, rail stations, tunnels, highways. Routine checks of scrap metal yards and land fill sites would also protect against illegal or accidental disposal of dangerous materials.
- **Fund research to improve detectors.** Low-cost networking and low-cost sensors should be able to provide wide coverage of critical urban areas at a comparatively modest cost. A program should be put in place to find ways of improving upon existing detection technologies as well as improving plans for deployment of these systems and for responding to alarms.
- **Training for hospital personnel and first responders.** First responders and hospital personnel need to understand how to protect themselves and affected citizens in the event of a radiological attack and be able to rapidly determine if individuals have been exposed to radiation. There is great danger that panic in the event of a radiological attack on a large city could lead to significant casualties and severely stress the medical system. Panic can also cause confusion for medical personnel. The experience of a radiological accident in Brazil suggests that a large number of people presented themselves to medical personnel with real symptoms of radiation sickness - including nausea and dizziness - even if only a small fraction of these people have actually been exposed to radiation. Medical personnel need careful training to distinguish those needing help from those with psychosomatic symptoms
- **Decontamination Technology** The ability to decontaminate large areas to ensure inhabitation after decontamination and not requiring abandoning it.

Conclusion

The events like 9/11 in US has made it essential for us to revisit our national plans to tackle asymmetrical acts of terrorism. In coming years, with so called internationalization of terrorism, threat of use of unconventional methods like RDD is quiet eminent. Even though most of the nations ensuring strict control over storing, transporting and handling of radioactive materials, loop holes in poor nations and rogue countries can be easily exploited by terrorist organizations to gain access and use radiological material. Proactive intelligence, international coordination and effective situation handling capabilities required to be developed to address this looming threat.

Lt. Col. (Dr.) Tushar P. Ghate, PhD

Lt. Col. Tushar P. Ghate holds PhD in Nuclear Energy with his thesis entitled Nuclear Energy: Changing Dynamics and Feasibility Analysis of Siting at Nuclear Power Plant at xyz Location in India. This study was aimed at analyzing the current technologies, laws, provisions and guidelines necessary for setting up nuclear power plant in India and to bring out framework for the setting up of nuclear power plants in future, considering all current and proposed legal and technological developments/amendments in Indian context.

Having worked in the Government/defence sector for last 20 years, he has undertaken multifarious independent academic and executive assignments. He has headed trial and evaluation department in Military Engineering College and conducted trials and evaluations of various radiation detection equipment introduced in India. He was also involved in carrying out analysis of Indo-US civil nuclear deal and its futuristic implications on power generation perspective in India vis-à-vis opportunities in Indian contexts. He has written papers on various aspects of nuclear energy, terrorism, forensic and security in national and international journals. He was a member of the technical committee formed to provide CBRN protection for the Commonwealth Games conducted at Delhi.

Search and Rescue: Trials and Tribulations

Gp Capt PI Muralidharan (Retd)

Introduction

The IAF has lost aircraft and aircrew in large numbers earlier in the annals of Indian aviation history too, sometimes in the hills with very delayed recovery of crash debris and mortal remains- in one event, this materializing after several years. Nevertheless the anguish and heart wrench of the past week, caused by the ongoing reportage of the missing IAF AN 32 ought to make all professional fliers and policy makers rethink our nation's priorities in the vital ambit of Air, Land and Sea Rescue(SAR for short). Surely we do not need sagas such as that of the Malaysian MH 370, the Air France jet earlier in the Atlantic or this recent unfortunate IAF mishap to make us sit up. It is well known that our country does not have a dedicated SAR agency, much less dedicated Air Rescue Squadrons a la the US Air Force. They have over fifty of them, one approximately for each of the 50 states. That now is something to speak for specialized air missions alright. One must admit that overall SAR efforts of single service agencies have been comparatively more successful than others involving wholly civilian or other mixed air assets. And to think that we now have a dedicated National Disaster Management Agency, but clearly oriented towards natural and man -made disasters and without any SAR mandate as such. The funding required to provide the latest available technologies and equipment to the concerned single service agencies need to

ISSN 2347-9191 print

CASS Journal, Vol. 3, No. 4, October–December 2016, pp. 117–121

be provisioned, to address a key aspect directly linked to national and military morale. This applies not only in peace, but in war too. Our Combat Search and Rescue capability needs buttressing too, so that we do not land up in situations of unrecovered Prisoners of War as indeed did happen in our 65 & 71 wars. A holistic approach to SAR is called for, marshaling resources available with the three services, the Coast Guard, the DRDO, our Intelligence agencies such as the NTRO and perhaps even private industry, to facilitate a timely and apt response to any kind of mishap involving our fighting assets, civil aircraft and other citizenry who become victims of natural and other calamities across the nation's air, land and sea frontiers.

Air Element of Rescue

The first responder in any contingency as articulated here in is normally the air element, from the IAF, Army Aviation or the Indian Navy. Perhaps on account of the flexibility that the medium affords, in terms of mobilizing quickly. Some IAF helicopter units had been tasked sectorally with SAR duties. They generally catered for fighter crashes, floods, earthquakes, fires, train/ bus crashes and likewise events. The quantum of air effort required for SAR is dictated by the immensity of the disaster such as numbers of personnel involved, expected area of search and ofcourse the terrain wherein the event occurred.. For a localized accident such as a fighter crash, the effort involved is normally focused in area and numbers of casualties. Also the prevailing SAR apparatus at various IAF stations is geared up to cope with it, given the specificities in aerial/ ground witnesses,radar assistance / air traffic control assistance which are normally available and the consequent triangulation of the accident site. Should the area of incident / accident be vast or under water or even immersed in thick foliage as normally obtains in the eastern sector, the assets required would be of a different order. Now after a week's search above water in the Bay of Bengal, we are reportedly having to switch our search domain to under water. Too late in the day perhaps, one could argue. Some worthy erstwhile colleagues have been articulating in the social media about the likely causes of this particular AN 32 disaster. Given the reported prevailing monsoon weather conditions, they have opined that it could well have been the result of rapid inflight icing over the wings or engines, leading to an uncontrolled left hand" graveyard spiral ". This whilst the pilot apparently wished to skirt weather to the right. Such inputs and quick analysis by concerned operations staff or from data that would invariably be available with the Flight Safety organization concerned, which would help

us focus on a realistic mode for the search. Doubts crop up when weather is suspect or a factor preventing meaningful search operations post the accident. But an intelligent appreciation of the most probable causative factor would help in arriving at the optimal search zones.

Search over Water bodies

Thus any planned search pattern over water would normally start with initial scans over the skies immediately on the surface of that water body, be it the sea, a lake or a river from aerial platforms. When it becomes evident that there is nothing to look for above the sea or river or lake, that is when the real challenges emerge in terms of underwater sensors such as sonars and bathyspheres. Depending on the expected area of search several numbers of these assets coupled with diver assets would be called for. A watery grave is not something any soldier or citizen deserves. The nation has the moral responsibility to bring those bodies home for a decent cremation or burial at the earliest. The goodwill generated thence would help hugely in bringing a sense of closure to the kin of the unfortunate victims. Soon India is expected to have on its inventory large amphibious aircraft, to be acquired from Japan,which could possibly be utilized to deploy specialists and divers rapidly to the expected disaster site, especially into large water bodies where to suitable float- fitted SAR helicopters are not available. Intelligent use of other unique assets such as Aerostats,AWACS and C 130Js need to be done.

Land Search & Satellite Tracking

Search and rescue over remote, inaccessible areas in mountainous or forested areas would pose their own peculiar challenges. Not only would mountaineering teams be required, communication gear, associated GPS devices and dog squads would be needed. They would need to work in tandem with aerial platforms and paramedic teams. Noise augmentation devices and other acoustic sensors would be required perhaps. One of our veteran Air Marshal tells his story of eons ago when after an ejection from a fighter in the Tezpur sector, he could not be picked up for several days, hidden as he was in the thick foliage. It is not far fetched to think of miniature drones as a standard fit in our survival packs. The agility and ease of maneuvering of these gadgets has to be seen to be believed. Ofcourse they would need GPS cueing or some other pre- programmed navigational software. But now we are in the era of drones and satellite technology and nothing ought to stay unknown, or un-pinged for any length of time. It is an irony that the very

same country that launches satellites for the Americans had to rely on American satellites to pick up possible signals from the AN32's rescue beacon. Why is this not a priority for our nation? Surely we could plan for our own geostationary sensors to pick up distress signals from any of our aircraft, ships or even mountaineers for that matter. One understands there are issues of masking of satellites etc but emphasis on fail safe pinging on multiple sensors of the international distress frequencies such as 121..5khz or 243.0 MHz. Further it is believed that satellite monitoring on both these frequencies have been discontinued of late and the US Coast Guard only monitors digital 406 MHz as of 1 Feb 2009. Are international agencies and India on the same " frequency"? India has already sent up two indigenous GPS satellites. Shouldn't we be prioritizing to have our own satellite tracking capability over the subcontinent and adjoining sea boards?

Uncertainties in SAR

Despite any amount of infrastructural design, we are still bound to have situations where in aircraft especially vanish into thin air, indicating the tremendously uncertain realms of aviation in general. Stories from the "Bermuda Triangle " era abound and examples such as that of the Malaysian MH 370 stand out. India needs to have tie ups with neighboring countries such as Bangladesh, Myanmar, Srilanka, Maldives to monitor distress frequencies from ground stations. Likewise suitable civil and military installations on the Eastern and Western seaboard need to have the capability to monitor and record these frequencies.

National Ethos

As a nation we unfortunately do not value lives. Other countries go out on a limb to save even a single life. What to talk of civilian accidents and disasters, even our military does not have a priority for Combat Search and Rescue(CSAR). Proper attack helicopters, FGA aircraft and trained special forces need to be at hand to undertake effective CSAR, The same assets could be deployed in peacetime for anti-terror, anti-smuggling or counter insurgency situations.

Onboard Equipment

Countries which are surrounded by water have a serious sea survival and SAR system in place. The U.K. is a classic example. The regimen for sea survival and rescue in the RAF is legion. Such a training regimen ensures the optimal

serviceability of all rescue equipment such as life jackets,dinghies, SARBE beacons, associated batteries and the works. India Air Force earlier on had a problem because our aircraft fleet were disparate, divided between Russian and limited Western gear. Now we have almost even numbers of both types of technologies and it is that much easier to standardise rescue gear such as personal rescue beacons, their power packs, radio frequencies and the like.

Conclusion

Any lackadaisical or delayed reaction by the system to activate effective SAR measures is tantamount to an anti- national disservice. One stands to lose not only the well known high morale of our fighting units, but also hazard generating ill will amongst citizens at large through the hurt and anguish caused to the near and dear ones from prolonged unresolved accidents and incidents. Contrariwise a timely rescue effort generates out of proportion goodwill. Apex bodies such as the National Security Council or the Cabinet Committee on Security would have to coordinate the national effort for SAR depending on the nature of the disaster, whether military or civil assets and personnel are involved and the terrain/ sector of occurrence. Single service agencies normally cut in their actions much ahead of others. But then some capabilities, such as deep sea search for example in the current disaster, may be beyond the capabilities of indigenous elements and extraneous assistance may have to be sought. Suitable Memoranda of Understanding with other nations and international agencies would pay dividends when the disaster actually strikes. Besides our nation's overall SAR architecture needs to be rehashed to make available the most timely and effective response to all sectors.

Talking Turkey: The Attempted 'Coup' and its Aftermath

Gp Capt PI Muralidharan (Retd)

Introduction

Having spent close on four interesting years at our Embassy there five years ago,one looks at the recent happenings in the Turkish landscape with a sense of sang froid. As a "civilian" functionary handling Consular Affairs one had a unique exposure to its political and military establishments A routine call on a senior Turkish Air Force official left me feeling rather impressed with their 'Americanised 'open system. I was able to reach his office without being accosted by security even once. Clearly I was expected! On another occasion, whilst driving around the countryside I had a good look at the typical shopping / corner shops complex abutting the vital installations at NATO's Incirlik airbase, travelling as I was in a CD car with family! On yet another occasion I had the previlege of standing in for the Ambassador at a sit-down dinner hosted by then PM Recep Tayyip Erdogan. Another memorable occasion was a visit to the Turkish Ministry of Foreign Affairs to discuss Consular affairs. Turkey had then just announced visa- free regimes with seven countries, including Libya and Syria, and we conveyed the Embassy's concern at this as undesirable elements would transit across to our homeland shores. This threat, significantly to Europe, was to play out dramatically down the line. Ofcourse , it would be a while before normalcy would return to affairs in Turkey.

ISSN 2347-9191 print

CASS Journal, Vol. 3, No. 4, October–December 2016, pp. 123–128

Role of Army in Kemalist Turkey

Mustafa Kemal Ataturk, when he took over the reigns of of a new nation in 1924 wished to make his country secular like the USA which was his ardent desire. Being a young Captain himself at that time, he was a unique military –civilian persona. The Turkish military had the onus to temper the nation's secular format, what with the infamous bans on the Turkish fez caps as a colonial relic and women's head scarfs as a vestige of Islamism. Incidentally President Erdogan's and several AK Party leader's wife's sport head scarfs, a clear sign of the party's Islamic moorings and Muslim brotherhood origins. Turkey has compulsory military service and it is considered prestigious to enlist. Girls swoon after soldiers traditionally and his entire village sees him off to duty with fanfare. Now, once Erdogan is done with his putzch one does not expect the Turkish Army's elan (or fighting prowess for that matter) to be anywhere near what they were known to be. Having seen up close and understood the history of their independence movement as vividly depicted at the Ataturk Mausoleum, the Anatkabir in Ankara, it is difficult to imagine a Turkey without a prominent Armed Forces.

History of Coups in Turkey

Turkey has had three regular military coups and one soft military coup (Darbe in Turkish) in the past, all caused by the Turkish Army (TSK) 's innate belief to be the guardian of Kemal Ataturk's pro- West, secular outlook. Any government with a tinge of Islamism was routinely dismissed by the military. The first military coup in 1960 led to the trial and hanging of the Prime Minster Adnan Menderes and his Foreign/ Finance Ministers. The second one in 1971 saw the overthrow of conservative PM Suleyman Demirel. Then again a third coup in 1980 took place in the overhang of the Iran hostage crisis and Russian invasion of Afghanistan, leading to American support for the coup makers and the assumption of power by Kenan Evren, its leader. Another soft coup in 1997 took place under the TSK's pressure when Necmettin Erbakan's Islamist government was removed by the Army in favour of a secular entity.

Attempted Coup of 15 July 2016

Details of what actually transpired in Istanbul and Ankara on 15 Jul are still not fully out in the public domain. From available inputs from UN Human Rights fora and some inputs from friends located there, many a doubt exists

in the modus operandi of the coup itself and the naïve manner in which basic tenets for a successful take over-such as take over of national media and shut down of social media and Internet- were not followed. The bombing of the Turkish Parliament and supersonic fighter runs over cities at night appear without any bigger plans or even juvenile. Now it seems that the coup did not have the support of the Kemalist upper echelons of TSK. Western media reports immediately after Erdogan's much touted Skype proclamation talked of a stage- managed affair, carried out by Erdogan and the AK Party to cleanse the military, judiciary and paramilitary of "Gulenists". Several thousands of senior and junior military officials have since been fired, so also many jurists, academics and media personnel. Academics were prevented from travelling abroad and several army institutions and schools, some of them a couple of centuries old,have been shut down. Erdogan now plans to channelise the entire training regimen of the TSK through the portals of a Defence University to be closely monitored by him.

Who is Fethullah Gulen?

Erdogan has sought to pin the entire blame for the latest coup on a little known Turkish cleric named Fethulla Gulen, exiled to Philadelphia for Islamist activities in Turkey. The AK Party was in bed with Gulenists till they enabled the virtual seating of the party in Turkey's political landscape. Erdogan himself is a product of Islamist schools and one of his government's early actions was to undo an earlier proviso denying upward mobility to students from these madarsa- type schooling.

Though Gulen 's Hizmet ideology clearly had sympathisers in the military, bureaucracy and the police, his actually being hands on for orchestrating the coup, is highly unlikely In a much hyped coup scenario a while earlier, nick named " Balyoz", the AK government had gone to town giving details of how a border skirmish and air war with Greece was to be the curtail raiser for a coup a couple of years ago. In 2007 the TSK brought pressure on the AK to soft-pedalled its Islamist policies. But Erdogan outmanoeuvred them, assuming Presidency for himself and proceeding legally against scores of senior army officers. Now that he appears to have fallen out with Gulen, Erdogan has now released several senior TSK officers, including exChief General Ilker Basbug, from custody. They had been apparently framed by the Gulenists as a ploy to further their own careers. Basbug himself has expressed his doubts in the veracity of the latest coup attempt.

Role of MIT

Turkey's now all powerful Intelligence agency named the Milli Iskibshraat Teskilaati(MIT) was earlier on a single organisation responsible for external and internal intelligence. Erdogan brought in Hakan Fidan as its Chief, whose university dissertation at Ankara's Middle Easr Technical University was on how external and internal intelligence gathering needed to be separated, Fidan himself was a retired Sergeant from the TSK, whom Erdogan cultivated as his " bull dog ". Erdogan is now expected to have direct control over the TSK and the MIT.

What the future portends

Turkey has been NATO's vital Cold War ally, what with 90 nuclear warheads stored at Incirlik., Turkey had recently permitted the USAF to undertake aerial missions against the ISIS, something it had denied them earlier when the Iraq invasion got underway. WithNATO's credibility at stake and its viability critical for situations such as the Russo- Ukrainian stand off, what happens in Turkey concerns the Western powers immensely. With the TSK's morale and combat leadership adversely impacted now, Turkey's contribution to any NATO operation has become suspect and its membership of the organisation itself seems heading for uncertain times. Along with Erdogan's attempt to bring back capital punishment (requiring 2/3 majority in a Parliament vote to amend the Constitution) is another aspect angering the West and the EU. It is learnt that the recent retrenchment of Gulenists has left Turkey woefully bereft of officer cadre and specialists such as fighter pilots. Reservists are already being called in reportedly.

Whither Turkey?

Erdogan has declared a six month emergency, virtually opting to rule without a government. Whilst Erdogan's attempts to have Gulen extradited from the US is unlikely to bear immediate fruit, there is a limit to how much longer he could extend his autocratic reign. There are lessons here for any nation that has a politico- military faultline and where autocracy rears its head. My personal belief is that Erdogan's days are numbered., There is that much any system or the moderate segment of society would tolerate and then the entire edifice would collapse. Erdogan's poet base is in rural Turkey. Many jehadi elements from Turkey have been active in Afghanistan, North Waziristan and

Syria. The Shia-,Sunni factor would accentuate in all the ongoing war zones and Turkey would be subject to more of ISIS attacks. Coupled with the revived Kurdish insurgency Turkey's landscape is ripe for a protracted civil war. Things are bound to get much worse there, before it gets better. NATO's intransigence to accede to Erdogan's Islamism and a disenchanted civil society would make the erstwhile Ottoman State a crippled political entity. Erdogan is making a great mistake by denigrating his Army establishment in this manner and seeking to browbeat public dissent through high handed police and intelligence agency action. Any balanced natio, more do one that had its Army to thank largely for its creation and largely for retaining its geopolitical interests, would find itself in a quandary when one such pillar of the national psyche is drastically emasculated. Conditions would deteriorate rapidly as and when an alternate leadership option than Erdogan becomes available. Then the nation would rally around him or her to hark back to its ha yon days, in this case the Kemalist Turkey rather than an Islamist one.

Conclusion

Turkey has many similarities to our good neighbour Pakistan. Both are Sunni republics with histories of military coups, dictatorships and latent Islamism. Uncannily both nations have the same numbers of Army Corps and Air Force Squadrons. It is well known that certain Pakistani dictators like Musharraf got inspired by Ottoman folklore and exploits of the Turkish Army. What is happening in Turkey could be a harbinger of things to come in our neighbourhood. As for India, several numbers of Gulen schools operate in India in cities such as Delhi, Hyderabad and Bangalore. The children studying in these schools are periodically taken to Turkey to "celebrate " neo -,Ottomanism. The schools are run under the aegis of theIndo Turkey Business Association (ITBA). The government needs to review the working and, if suspect,close down these institutions because of their possible nefarious hidden Islamist agenda. Many Gulen schools have already been shut down by Erdogan post last month's attempted coup. Indian soil cannot be allowed to be used for germination of unconducive ideologies in the future generations. Our own interaction with the TSK, Turkish MIT and the AK government at large need to be re-calibrated..

Gp Capt PI Muralidharan (Retd)

After his NDA and Air Force training Gp Capt Murli Menon (Retd) was commissioned into the fighter stream of the IAF in 1973. He has had a distinguished professional career in field and staff assignments spanning over three decades, including as a Directing Staff at IAF's Tactics and Combat Development Establishment (TACDE) and flying inspector with the Directorate of Air Staff Inspections (DASI). After commanding a MiG 23 MF fighter squadron at Adampur he was one of three officers specially selected to craft IAF's first ever Air Power Doctrine, the IAP 2000, at the Air War Strategy Cell in Air HQ. He was awarded a Presidential award Vayu Sena Medal in 1993 for this endeavor. He then went on to command a premier fighter base in South Western Air Command. He also served in key staff appointments in Air Defence and Intelligence directorates at Air HQ. He was part of the "Battle Staff "during the Kargil air operations. He served thereafter as India's Air Adviser at High Commission of India, Islamabad between 2000-2004, a period marked by paradigm shifts in the strategic landscape in the subcontinent post 9/11, in the Musharraf era. Moving laterally to the Cabinet Secretariat in 2004, he served there handling Pakistan/ China military desks and later as Consular at Ankara, Turkey between 2007-2011. On return from Turkey he looked after for two years training of midlevel intelligence operatives of the government. He now writes for some think tanks in India and the USA, besides also contributing to some Indian Defence journals and media houses.

BOOK REVIEW OF 'PACIFIC'
Book Authored by Simon Winchster

Pacific

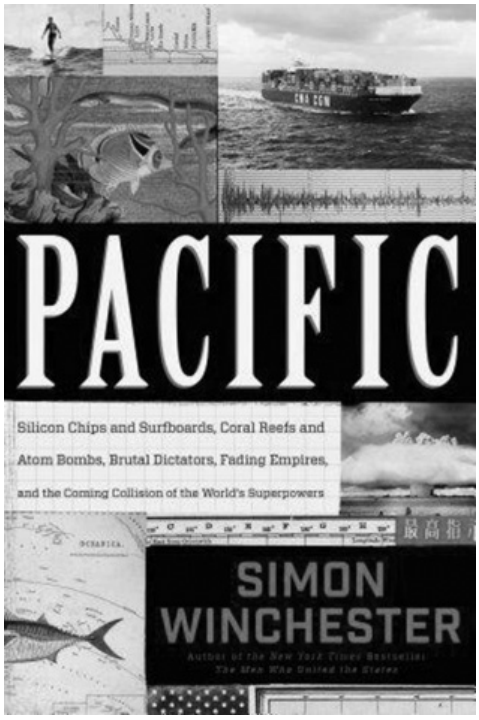
Captain Milind Paranjpe

Simon Winchester, that author of many best selling books, has yet again come out with an engrossing masterpiece, this time on Pacific, the biggest of all oceans, covering economy, politics, history and Social conditions of countries within and litoral to it, all beginning from 1st January 1950. According to him, Pacific symbolizes tomorrow's world.

Winchester leads us from Kwajalein island of the Marshall Islands group, leased to the US for $ 18m per year till 2066 to "more or less as Washington pleases" that is, mostly for missile defence tests and the like. In spite of the money poured into it, Kwajalein remains poor, fetid, smelly and overcrowded. Author has used Bombay and Calcutta for comparing its slums. But condition of Bikini Atoll where the atomic test was carried out, is even more degraded. Wyatt, the American administrator finally invoked the Book of Exodus to convince the unwilling residents of Bikini to move out of the Islands for the tests. Use of religion, was the clincher, the masterstroke! 'Operation Crossroads' was the first of 55 nuclear tests that followed. Reader is shocked to know that Britain carried out its nuclear test on Kiribati, formerly known as Gilbert Islands, without even relocating its natives. Ironically, one of the many products created by atomic test was 'carbon 14' from which method of measuring age by what is known as 'carbon dating' was evolved. 1954 nuclear test known as '*Castle Bravo*' had far worse and permanent effects on the health of islanders but

ISSN 2347-9191 print

CASS Journal, Vol. 3, No. 4, October–December 2016, pp. 129–133



Pacific: *Silicon Chips and Surfboards, Coral Reefs and Atom Bombs, Brutal Dictators, Fading Empires, and the Coming Collision of the World's Superpowers.* Harper Collins, Pages 493, USD 28.99 By Simon Winchester, October 2015.

the authorities kept denying it.

Author then describes how invention of transistor by a Japanese named Mr Ibuka, caused the radio revolution. Further invention of color television coined the phrase '*consumer electronics*'. World's biggest container ports in the 1960s were in Japan but now that honor is taken over by China, Taiwan and Korea, still on the Pacific Rim. Winchester calls surfing the kingly sport that nearly became extinct thanks to prudish Christian missionaries who considered naked, even near naked body an unforgivable sin. Jack London reintroduced it to Westerners in 1907. Freeth, a half Hawaiian grandson of an Irish ship-owner, showed surfing for the first time to hotel guests on Redondo Beach in California. Duke Kehanamoku a native Hawaiian, winner of several Olympic medals for swimming, became an icon of surfing, now the obsession of coastal America. 'Gidget' a Hollywood movie based on an eponymous novel in 1959 spawned worldwide interest. Today, surfing is a sport generating multi-million dollar business.

The 1968 USS *Pueblo* incident is recounted in detail. A casually drawn line along 38th parallel on National Geographic's map of Korea by Colonel Bonesteel III hurriedly partitioned Korea leaving a dire and dangerous irritation for years to come. India-Pakistan partition comes

to author's mind. USS *Pueblo*, ostensibly a research vessel, actually on a spy mission, but 15 miles off North Korean coast, was fired upon and ordered to stop by NK forces. Ship's chief engineer, 'viewing the situation as hopeless, demanded that the vessel come to a stop, and seeing Captain Bucher's momentary indecision, wrenched the pilothouse annunciator to stop all engines, which the engine room unquestioningly obeyed'. Winchester has termed engineer's action 'mutinous moment'. Bucher then could do nothing more than obey Korean's order to follow them to North Korea. 'Commentators in America would long be unforgiving: One could hardly imagine, they said, that John Paul Jones or Admiral Farragut or Lord Nelson or Rodney would ever have done such a thing. They would have gone down with crippled and burning ship, her ensign sinking into the depths, just as the Captain's hat floated off to join it. To do otherwise was unworthy, unacceptable, un-American.' As a seaman, I wonder if commentators were fair to Captain Bucher. His was a research vessel, with no guns to fire back and speed paltry 13 knots.

In chapter 'Farewell to all my friends and foes' withdrawals by foreign powers from Pacific rim are graphically narrated. Spanish were the first to go followed by Germans at the end of First WW. Next were Japanese and Dutch. French were defeated by Vietnamese in a decisive battle at Dien Bien Phu and the Americans from Saigon in 1975. British were the only ones who left in a somewhat dignified manner, Hongkong being their last.

Winchester takes us to Australia's 'Whites Only' policy, their Magna Carta, which mentions Asiatic and coloreds in the same category as mad-men, prostitutes, ones affected by illness of loathsome or dangerous character who could not enter. He narrates how copper, gold and silver can be commercially excavated from Pacific's depths by 2018. BRICS countries are likely to support it despite concerns of environmentalists: "Why should they bear the consequences of environment". Woods Hole Oceanographic Institute's bathyscaphe has discovered that there is life 5 miles deep down at ocean bed and it does not require sunlight or oxygen! Pacific Gyre and Garbage Patch, Great Barrier Reef, coal shipments from Australia's ecologically sensitive coastline are covered in the book. Few readers would know that an International Albatross and Petrel Conference is held regularly for their conservation.

After Mount Pinatubo's catastrophic eruption in 1991, the US abandoned Subic Bay naval base and Clark air-force base in the Philippines.

Chinese ambition of hegemony over South China Sea then picked up and became apparent in 2006 when US carrier *Kitty Hawk* discovered a Chinese attack submarine only 5 miles from it when in South China Sea. Author describes a couple of confrontations between American and Chinese ships in those waters. But his observation is significant: "Would the Chinese navy have a lesser interest in protecting the sea-lanes than the Americans do today? Further, might not a policy of Asia for the Asians offer greater stability for the region and beyond?"

Ancient Polynesian art of long distance navigation was considered lost due to rules by different Western powers in different Pacific Islands which prohibited it. Reader is happy to know that a Caroline Islander still aware of the art was found living and he sailed in the traditional sailing canoe *Hokule'a* from Hawaii to Tahiti, arriving exactly on time with no navigational instruments, no compass, no sextant, chronometer or chart relying solely on wind, waves, clouds, stars and birds. Polynesians all over the Pacific celebrated.

Winchester has visited many remote places such as Kamchatka and Pitcairn Island and journeyed to North Korea and Australia. The bibliography of some 200 books at the end is a proof of his deep research of the subject. The book should be read by not only sailors but also others to enjoy various interesting details the author has taken pains to describe.

Captain Milind R. Paranjpe

Milind R. Paranjpe, master mariner, ex vice president Killick Nixon Ltd, ex-deputy master Company of Master Mariners of India, editor of *Command*, its journal for 10 years, is a regular contributor to newspapers and magazines. He is the author of '*Ramblings of Sea Life*' a book of experiences of his career at sea.

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

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

Email : sales@menakaprakashan.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