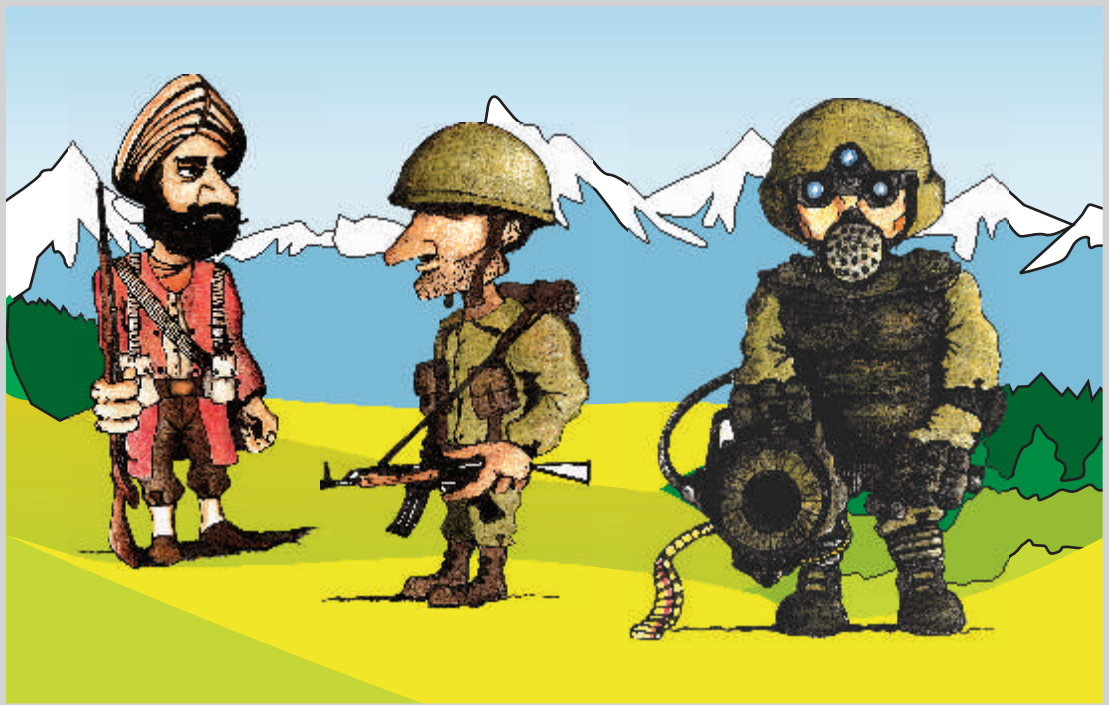


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Changing Global Security Environment with
Specific Reference to our Region and
its Impact on the Indian Army

Deepak Kapoor



RMA: A Selective Monographic Overview

S.G. Inamdar

Armed Forces: A Career Choice?

H. Dharmarajan

The Train to Lhasa

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PERISCOPE

Indo-African Military Cooperation

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Changing Global Security Environment with Specific Reference to our Region and its Impact on the Indian Army

*Deepak Kapoor**

INTRODUCTION

It is indeed a great pleasure for me to address such an August gathering of security experts and to share thoughts and perception on the 'Changing Global Security Environment with Specific Reference to Our Region and its Impact on the Indian Army'.

Let me begin by flagging the changing geo strategic environment. The gradual but distinctly discernible shift towards multi-polarity in power equations and the shift in global Centre of Gravity to Asia are the most distinct features of this change. Past experience shows that major shifts in power equations create volatility in the international order, even though the period of instability may be relatively short-lived.

Interestingly, much of the qualitative re-arrangement of power now underway is not attributed to military capabilities or 'hard power', but to a factor unique to the modern world: rapid economic growth and the related quest for growing energy security. The power shifts towards Asia can be linked to its phenomenal economic rise. The rise of China, as also India, in the global economic arena is the most visible manifestation of the forces of globalisation, which are also resulting in a number of related socio-economic and security challenges within the region. On the other side, it is

*General Deepak Kapoor is the Chief of the Army Staff. This is the text of his lecture delivered as a part of IDSA National Security Lectures series at the IDSA on July 3, 2008.

also a fact that the fountainhead of global and regional terrorism also lies in this region.

How does all this impact India? While developments in the field of economy, information technology and overall consolidation of our comprehensive national power have put India on the growth path, our internal security environment is yet to stabilise and is often exploited by external inimical forces, through asymmetrical means. However, these challenges and contradictions notwithstanding, India's inherent strengths and credentials make it an important pillar of stability in the emerging world order. The Armed Forces, being an important constituent of India's Comprehensive National Power, need to keep pace with the emerging trends and challenges and work in concert with other elements of national power to ensure India's rightful place in the emerging regional and global arena.

I shall be covering my talk under the following broad heads: -

- (a) Global and Regional Security Environment.
- (b) Impact on the Indian Army.
- (c) Future Perspectives and Challenges.

Part I - Global and Regional Security Environment

Drivers Shaping the Global Security Environment

Let us take a look at the major trends emerging in the global and regional security environment: -

- (a) Globalisation. The spiralling inflationary trends, soaring oil prices, fear of food shortages and upheavals in the financial markets driven by global cues, reinforce the fact that no Nation

today can remain insulated from events related to economic and security trends - in any corner of the globe. The intertwining of economies, as a consequence of globalisation, has resulted in geo-economics supplanting geo-politics. It would be debatable, however, to believe that greater economic interdependence alone would lead to improved geo-political stability. While the benefits of increased global connectivity and technological advances are enormous, its negativities in terms of increasing social and economic disparities, which can be exploited by inimical elements, need to be taken note of. There is also a fear that the ill effects of globalisation could reinforce tendencies towards competitive 'Protectionism' and regionalism.

- (b) International Terrorism. The rise of international terrorism indeed shows that the information age is both an integrating and a dividing force. Terrorism remains the principal challenge to liberal and democratic societies and now occupies centre stage in the international security matrix. The scourge of terrorism will continue to invite the focus of global attention in the foreseeable future, which will require earnest international cooperation to deal with it effectively.
- (c) Proliferation of WMD. The efforts of various renegade state and non-state actors to gain access to WMD have highlighted the dangers of proliferation of WMD material and their delivery means, especially if it reaches the hands of terrorists. India remains as concerned on this count as the other global powers.
- (d) Energy Security. The quest for control of energy resources of West Asia and search for alternate routes for trans-shipment of oil

and gas from the Caspian Region has brought the West and Central Asian Regions under sharp focus, thereby enhancing the chances of competition and potential conflict. It is no coincidence that most of the ongoing conflicts are centered in and around the regions that are rich in energy resources.

- (e) Undermining of the UN. In the recent past, we have also witnessed increased undermining of the UN in providing the lead role for resolution of conflicts and stabilisation. There is an urgent need to re-structure the UN for it to remain relevant to the emerging realities. The reality is that the five unelected yet permanent members of the Security Council need to share executive authority with new and emerging powers; India being amongst the most prominent.
- (f) Radicalisation in the Islamic World . Wars in Iraq and Afghanistan combined with lack of progress in resolving the Palestinian problem are causing an increasing cross-current of disaffection resulting in radicalisation within the Islamic world and isolation of moderate forces. Relatively, a large yet benign Muslim population has added to India's strengths.
- (g) Changing Nature of Conflicts. The wars in Iraq and Afghanistan appear to be at critical crossroads and their outcomes will have a major bearing on future security contours of our region, in particular and the world, in general. These wars, and the one in Lebanon in July - August 2006, have thrown up new political and sectarian equations and emphasised once again that the era of “all out wars” is slowly being replaced by "war by other means" - unconventional, asymmetrical and across a wide range in the spectrum of conflict. We, in the Army, are alive to this transition to Fourth Generation Warfare.

Regional Trends and Security Concerns

I will now touch upon the contours of our regional trends and security concerns.

West Asia. West Asia remains one of the most unstable, conflict prone and volatile regions of the world. The region, being a major source of hydro-carbon energy, will continue to invite engagement by major world powers. Further, till a just and an acceptable solution is found to the problem of Palestine, this region has the potential to remain a source of conflict. Stability and security in the Gulf region is therefore critical to India as it has an impact on India's economy as well as on safety of a large Indian diaspora.

Central Asian Region. The Central Asian Region has witnessed increased engagement by the US, China and Russia owing to the availability of hydro-carbon reserves. Moreover, the countries of this region, all of which broke away from the erstwhile Soviet Union, are fledgling economies and have nascent governing structures, thus making them potential sources of conflict. The Shanghai Cooperation Organisation (SCO), which has China, Russia and four of the Central Asian Republics as its members, is reflective of emerging power equations.

South East Asian Region. The enhanced economic strength of ASEAN countries and the importance of the region, especially the Straits of Malacca for transit of global trade and energy, have resulted in India actively pursuing its 'Look East Policy'. We not only share common cultural heritage with the South East Asian nations but also share common concerns on a range of security challenges like terrorism, religious radicalism, gun running, drugs, piracy and illegal immigration.

Afghanistan. The outcome of substantial reconstruction efforts in Afghanistan to bring this country into International mainstream, in the long run, will have a profound effect on the global security matrix. The situation remains critical, as the Taliban continue to strengthen its ranks and step up attempts to disrupt the reconstruction process. India has major security interests in Afghanistan and its stabilisation are in our interest.

China. China, our largest and most powerful neighbor and a rapid rising power, continues on the path of high economic growth, combined with rapid military modernisation. We have differences related to the boundary question, which are being resolved by special representatives of both the governments. Our mutual economic engagements and continued efforts to amicably resolve this boundary issue have ensured peace along the border. Regular visits at the highest level have further added to the dimension of constructive engagement and mutual confidence in our relationship. However, we need to take note of the likely implication of China's military modernisation, improvement of infrastructure in the Tibet Autonomous Region and other related issues, which could impact our security in the long term.

Pakistan. The situation in Pakistan is fluid. The recent elections have restored a democratic polity, which is hard pressed to restore security and stability to the country, in the face of complex challenges. Various contradictions in the Pak social political fabric, power struggles between the polity and the President, and the fragility of institutions like the judiciary and educational infrastructure are likely to occupy centre stage for sometime. The new approach by Gen Kayani, the Pakistan COAS, to reduce the direct role of the Army in governance mechanisms appears to be an endeavour to consolidate and restore the Army's declining image. I feel the biggest challenge faced by the Pakistan government is to moderate the largely radicalised sections.

Our Immediate Neighbours. Almost all the other countries in our immediate neighbourhood are undergoing varying forms of instability. Nepal has transited into a Republic, ending the 240 year old monarchy. Future portents for peace and stability in Nepal depend on the approach of the new dispensation to governance. The radicalisation of the domestic environment in Bangladesh, continuous inflow of illegal immigrants to our North East and escalation of violence in Sri Lanka are issues of concern to us. Keeping Myanmar engaged, due to security and economic reasons, is important to us. The emergent humanitarian effort undertaken during the recent cyclone is reflective of our relationship. Maldives is stable; however, recent incidents indicate a potential for instability. Bhutan is transiting peacefully from hereditary monarchy to democratic governance. However, the unresolved Bhupalese problem could destabilise the region. All this calls for keeping a continuous watch on happenings around our immediate neighborhood, and ensuring that there are no adverse spillover effects.

Threat Perspective

External Threats. The threats and challenges that we face in the emerging environment are multifarious. India shares 3323 kms of land borders with Pakistan and 3488 kms with China. The situation along our borders with China and Pakistan has witnessed periods of calm interspersed with hostilities. While there are other areas of concern that may pose threats to our security, the existing reality of border issues will continue to remain an important factor in our consideration.

Spill- over Effects from Other Neighbouring Countries. We have very strong and traditional ties with all our neighbouring countries. However, some of these are afflicted by internal security problems, which owing to trans-border ethnic affinities have the potential to spill over into our country. The 2007 index of poorly performing states released by the

'US Foreign Policy Magazine' continues to place some of India's neighbours top of the list. Illegal immigration from these countries also remains a serious cause of concern.

Indian Ocean Region. The Indian Ocean Region (IOR) has assumed greater importance in view of the increased maritime activity. India has approximately 1200 island territories off its Western and Eastern seaboard. Some of these are upto 1300 kms from the mainland. As you are aware, 70 percent of the world's oil, 33 percent of global trade and 50 percent of world's container traffic passes through the IOR. The region, therefore, has importance not only for India but also for the other major economies of the world. In this regard, security of the SLsOC assumes importance, because of our geo-strategic location. Protection of island territories located far away from the main land, and offshore assets, also assumes added significance.

India's Internal Security Dimensions

Internal Security Environment. Indian society is made up of diverse ethnic groups, cultures, languages and religious denominations. These are both strength and a challenge. Although India's national integrity remains fundamentally secure, we do have some challenges emerging from the social and economic disparities amongst the cross section of our society. Religious fundamentalism is also an area of concern.

J & K. The overall situation in J&K is well under control of the security forces and is showing distinct signs of improvement. Our endeavour is to ensure that the 'moral ascendancy' gained by the Army is maintained and the situation in J & K improves further. Our strategy of 'Iron Fist and Velvet Glove' is paying rich dividends. Our focus is on conduct of surgical and professional operations based on hard intelligence, causing minimum inconvenience to the local populace. Upholding Human Rights is one of

the corner stones of our Anti Terrorist operations and our record is worth emulating. The groundswell for peace indicates that the people are fed up with violence and are seeking a peaceful return to normalcy. Violence levels have seen a sharp decline as compared to the corresponding Period of 2007. This can largely be attributed to an effective Counter Terrorism Grid in the hinterland. The surge in tourism and other normalcy indicators are a manifestation of the aspirations of the common Kashmiri people for a peaceful and prosperous life. The elections to the State Assembly scheduled later this year will be an important benchmark in J&K's return to normalcy.

North East. Owing to the relentless efforts of the Security Forces, the security situation in the North Eastern States of the country has shown a significant improvement in the past few months. Most parts of the region today are free of violence and normalcy has been restored. The peaceful conduct of elections in Meghalaya, Nagaland and Tripura, with a very high voter turnout, is indicative of the substantial progress towards normalcy in the region. Popularly elected democratic governments are in power in all States. The pace of development activities and tourism are gathering momentum, which are encouraging signs. Sustained operational pressure and persuasion by the Security Forces has resulted in large number of terrorists surrendering along with their weapons to various agencies. Overall, we see that more and more groups are entering into a 'Suspension of Operations' agreement with the Government, which is a very positive development.

Naxalism. In the larger Internal Security Construct, Naxal violence poses a major challenge. The Army is taking a close and careful look at the various trends and developments. Consequently, we have been instrumental in strengthening Police and Para Military Forces like the CRPF, PAC and Reserve Police Battalions across the States by providing advice and training in Counter Naxal Operations, Counter IED Operations

and “Training of Trainers”. We are rendering assistance in the establishment of Counter Terrorism Schools and in the analysis of violent incidents to help the police and the PMF to formulate an operational framework. The Army, however, maintains that this is a socio economic problem and it needs to be dealt by the states using the Police and Paramilitary Forces.

Part II - Impact on the Indian Army

General. How do these factors impact the future contours of the Indian Army as also our operational philosophy? The array of emerging global and regional complexities enjoin upon India to develop matching military capabilities in keeping with its growing economic and technological status, so as to ensure a continued stable and peaceful environment. Before I dwell upon the future shape, areas of thrust and the challenges we face in attaining the desired vision for the Army, let me touch upon some cardinals of our National Security Policy, the Fundamental Determinants of our Military Structure and the Present Profile of the Indian Army.

Cardinals of our Security Policy. Our national security policy is based on TWO cardinal principles, i.e.: -

- (a) We have no extra territorial ambitions, and
- (b) We have no ambition to transplant our ideology on others.

Fundamental Determinants of Indian Military Structure. Before introspecting on the current perspective, I wish to highlight the fundamental determinants of the Indian Military structure, which are: -

- (a) The Indian Armed Forces have multi front obligations.
- (b) India is not a member of any military alliance or strategic

grouping. Therefore, it needs to maintain an independent deterrence capability.

- (c) Due to external abetment, the Indian Army is involved in internal security functions on a relatively larger scale than normal.

Present Profile of the Indian Army. Though the Indian Army is undergoing steady modernisation, the present profile of over ONE million strong Indian Army can essentially be described as: -

- (a) A large standing army which is structured, equipped and trained primarily for traditional methods of warfare - a combination of a deliberate as well as a manoeuvristic approach across the spectrum of conflict, ranging from sub conventional warfare at the lower end to all out war against a Nuclear backdrop at the higher end. We are in the process of transforming our war fighting doctrines and concepts in keeping with the emerging challenges.
- (b) The Indian Army has been involved in sub conventional operations for the past 50 years, more so, high intensity operations in the last two decades. This has provided the bulk of the Army with rich combat experience in the conduct of such operations.
- (c) Equipping a large standing army with such varied challenges is a difficult and dynamic process. Our equipment profile is a varied mix of vintage, contemporary and futuristic technologies. We normally work on a 30:40:30 concept, though in certain high tech areas, where the pace of change is rapid, these ratios could vary.
- (d) There are some voids in organisation and equipment, which is but natural in a large standing Army, but these are under constant review. It is our endeavour to ensure that 'Minimum Assurance Levels' are always held and maintained.

- (e) The three Services have made a good start towards achieving a merge in various operational, training and administrative facets. The structures are already in place for joint intelligence, planning and conduct of operations at the highest level. Requisite interaction exists to make us confident of undertaking 'joint' operations successfully.
- (f) The Indian Army has contributed in substantial measure to UN peacekeeping missions worldwide, and has acquired an enviable reputation for professionalism mixed with compassion. Presently we have around 8000 peacekeepers from the Army on duty worldwide with the UN and this contribution will only grow in the future.
- (g) The Army remains one of the best organised, structured, equipped and disciplined organisations to react both to natural and man made disasters. Our record in this field has been well appreciated both within and outside the country - our concept being "First Responders - Last Resort".

Based on the aspects that I have outlined, I will now state the vision that we have spelt out for the future contours of the Indian Army.

Part III - Future Perspective and Challenges

Indian Army Vision

My Vision is "To consolidate the Army into a highly motivated, optimally equipped and modernised, operationally ready force, capable of functioning in a synergised joint service environment, across the spectrum of conflict".

Contours of Future Conflict

Future conflicts, against a nuclear backdrop, are likely to take anyone or combination of the following forms, for which we need to shape our Army accordingly: -

- (a) Conflicts across the entire spectrum of military operations, to include Low Intensity Conflict Operations.
- (b) Asymmetric Warfare, to include unrestricted warfare, encompassing a wide arena of networks and systems.
- (c) Dealing with spill-over effects of instability and violence in neighbouring countries, including the Indian Ocean Region, which mandates an 'Out of Area Contingency Capability'.

Capability Generation

The future contours of the Army need to be based on a number of capabilities, given the present security scenario. Broadly, these are: -

- (a) Deterrence Capability. A strong conventional deterrence backed by an appropriate strategic capability, to deter any potential adversary from undertaking inimical activities or initiating hostilities against India.
- (b) War Fighting Capability. To cater for the possibility of failure of deterrence, the Army needs to possess the capability for calibrated response, as also the capability to prosecute decisive conventional operations against a nuclear backdrop.
- (c) LICO Capability. The Army should possess the requisite capability to be able to effectively deal with internal conflict

situations, such as externally abetted 'proxy war', insurgency and militancy, in coordination with civil agencies mandated for this purpose.

- (d) Force Projection Capability. In keeping with our growing regional aspirations, we need to possess capabilities to deploy the land component of a joint task force for out of area operations, when mandated.
- (e) Peacekeeping Capability. As mentioned earlier, the Army needs to possess capabilities to fulfill international peacekeeping obligations, under the UN mandate, preferably in areas of our strategic interest. Keeping in view our growing stature and reputation in UNPKO, demands for enhanced participation are likely to increase.

Areas of Special Focus

Doctrines and Concepts. Up gradation of our operational doctrines has been undertaken to ensure that our war fighting machinery is compatible with the futuristic battlefield scenario. The Indian Army's doctrine for sub conventional operations, which was released in January last year, elucidates the latest security dynamics along with our collective wisdom and experience of over five decades in these types of operations. The doctrine is in the open domain and available on the Internet.

Harnessing Technology. Technology has to be increasingly harnessed and exploited to the optimum so as to have a well balanced weapons and equipment profile. Further, the focus of modernisation has been to absorb emerging technologies, to keep pace with the 'Revolution in Military Affairs'. Phasing out of obsolete equipment and implementing high degree of technological modernisation are achieving the same. We

have acquired and are in the process of acquiring - state of the art surveillance and intelligence equipment, accurate and lethal long range firing systems, up-graded night fighting capabilities, Future Infantry Soldier as a System (F-INSAS) for infantry, Advanced Light Helicopter (including Weapons System Integrated version) and battle field management systems with the aim of achieving 'network - centricity'. Exploitation of space-based capabilities is another priority area.

Dealing with Asymmetric Threats. Over the past decade, various states as well as non-state actors have continued to find ways and means to develop asymmetric warfare capabilities, to be applied against us. Countering asymmetric threats is an area of high priority for our Army, and we are developing a more advanced capacity in this regard. We have to remain one step ahead of this elusive adversary, and that's easier said than done.

Special Operations. For specialised tasks and critical contingencies, we are endeavouring to build desired capabilities in our Special Forces.

Defence Cooperation. Military to military cooperation between India and other friendly countries has helped in not only familiarising with available technologies and best practices, but has also enhanced mutual trust and interoperability with these countries. This is also the basis for addressing shared concerns over threats like terrorism, extremism and militancy. Defence cooperation with countries in the immediate and strategic neighbourhood is an area of priority focus for the Indian Army.

Future Challenges

While we have laid out a pragmatic vision of the shape and size of the Army in the long-term perspective, there are a number of challenges that need to be met to develop and maintain a ready and relevant Army for the 21st century.

Defence Budgetary Needs. Like any other developing nation, there is always a competition for the financial pie. The Nation has to balance its budget for its security and developmental needs - the classical 'guns vs butter' debate. Though the defence budget for 2008-09 is ten percent more than the previous year's allocation, an analysis reveals that for the first time, since the India-China War of 1962, it has fallen below two percent of the Gross Domestic Product (GDP). There has been a persistent decline over the years from 3.38 percent in 1987-88 to 1.98 percent today - much below the global average. In order to develop desired Force Capabilities, the military planner is therefore confronted with the dilemma of improving the Capital vs Revenue ratio. This requires simultaneous rightsizing with induction of State of the Art weapons and equipment. In order to meet these twin objectives and enhance the assurance of the requisite capabilities, we are focused on indigenisation and the collaborative approach but without compromising on our operational capabilities.

Restructuring and Rightsizing. The emerging operational environment and the ongoing process of modernisation in the Army calls for re-structuring and rightsizing of the Army. The challenges that we face in this regard are two fold; firstly, evolving the requisite structures to operate in a joint environment with the other two services, with least possible turbulence; and secondly, attain the optimum size of the Army without impinging on the manpower intensive requirements of manning unresolved borders and operating in Low Intensity Conflicts. I must mention here that recent conflicts - those ongoing in Iraq and Afghanistan, and the 'Israel-Lebanon' War, have reiterated the necessity of 'Boots on the Ground'. Hence, we are going about the aspect of rightsizing in a very deliberate and pragmatic manner.

Modernisation and Development of Human Resource. Rapidly changing technology means that the systems get obsolete faster.


The Indian Army needs to remain 'contemporary' by imbibing 'affordable' technology. While we may get all the technology and resources to attain the desired force goals, we will need to upgrade the threshold level of the soldiers and leaders to handle these systems, and enmesh them to operate with other Services as also armed forces of other countries. We have incorporated appropriate institutional mechanisms to address this aspect and minimise the mismatch between man and machine. Training methods are also being reoriented to ensure better exploitation of modern equipment and technology.

Multi Spectrum Orientation Challenges . The Army has to be prepared to perform multi-operational tasks simultaneously. We have to remain prepared to fight a conventional war, while continuing to deploy large numbers for guarding the borders, counter proxy war operations and providing troops to UN missions, all at the same time. The ability to reorient, operate and switch over from one band of the spectrum of conflict to another, in a quick time frame, is a major challenge that the Army is preparing for.

Joint-ness. Let me take this opportunity to reiterate the Army's commitment to joint ventures. We are fully seized of the critical need to implement joint performance for optimising our war-fighting potential, in keeping with our security needs. As I have mentioned earlier, we have made good progress towards accomplishing joint-ness in various facets. However, new geo-strategic imperatives, technology and the changing nature of conflict, call upon us, to enhance the levels of joint-ness even further. There is ample scope for enhancement of Inter Service cooperation and integration, in related areas of congruence, by optimizing our force capabilities in the technological realm and by synthesizing resources and efforts of the three Services. Overall, the Army stands fully committed to joint-ness and optimum synergy in the future.

Leadership Challenges. In the future, battlefields are likely to be marked by very high degree of volatility, uncertainty and complexity. The Army is consciously working towards sharpening the core professional competencies of its leaders to enable them to operate dynamically against increasingly ingenious and elusive threats. Operational Art is a key focus area for the senior leaders as is the ability to orchestrate change, one step ahead of an emerging challenge.

Conclusion

The 21st Century certainly promises to be momentous for the nation in many ways. Despite the turbulent times and the region that we live in, our democratic credentials remain strong and our economy has shown resilience. The potential rise of India as a major power would require development of all elements of National Power, to secure our interests and enable us to play a more effective role in the regional and global arena. Not only should the country be ever prepared to meet external challenges from its traditional adversaries but also it must continue to retain strategic autonomy in decision-making. The Army, as part of the defence forces, comprises an important component of India's comprehensive national power and has always responded to every challenge successfully. It will be my endeavour to ensure that the Army remains not only ready but also relevant to today's needs and the anticipated challenges of the future. 

Integrating the Indian Military: Retrospect and Prospect

*Vinod Anand**

Wars are not fought only by the armed forces, but by the entire nation, the government and all its organs, the media and the people in an integrated and unified manner. The Kargil war was one such event that unified the nation. The political, diplomatic and military insights gained during the conflict have tremendous learning value for our politico-military structures and processes. It was with this purpose of learning lessons and sharpening our higher defence management that the Kargil Review Committee was formed in the aftermath of the Kargil War of 1999. And recent history of moving towards jointness among the three services and integrating them with the apparatus of higher defence organisation can be said to have started with the recommendations of the Kargil Review Committee of 1999 which was followed by a ministerial review by a Group of Ministers. The Task Force on Management of Defence, headed by Mr. Arun Singh had submitted its report in August 2001, wherein it had made a number of recommendations regarding integration of Service HQs with Ministry of Defence (MoD), changes in procurement and acquisition process, evolving long term perspective plans, creation of Chief of Defence Staff (CDS) and putting in place of a Strategic Force Command besides tri-Service Andaman & Nicobar Command.

While considerable momentum was imparted to implement the defence reforms in early days due to the shock effect of Kargil, lately this shock seems to have worn off. The reforms as recommended by the GoM task

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force, especially pertaining to jointness and integration, are being neglected and there seems to be a lack of will in implementing them. A review of over five years of ongoing reforms in the defence establishment shows a mixed report card. While some baby steps have been taken towards enhanced jointmanship and integration, these reforms are more in form rather than in substance. This paper examines the progress made in implementing the defence reforms, especially the ones pertaining to jointness and integration, analyses the current levels of jointness and integration and also recommends what needs to be done further.

Source of Jointness and Integration

The process of jointness and integration amongst the armed forces commences with the issuance of Raksha Mantri's (RM) Directive. And the process ends up by providing a single unified product and service to the nation in terms of defence and military capabilities, thus contributing to national security. At present RM's directive, apparently, is meant only for the three Services of the Armed Forces and is generic in nature. A more comprehensive document would be a Defence Planning Guidance (DPG) which assesses the military threats, provides goals, objectives and priorities for defence missions, looks at resource forecast and strategic technology forecast and gives out a broad strategy for the development of military capabilities. Respective departments of MoD like Department of Defence Production and the three Service HQs are given inputs by the DPG for developing their own strategies and plans to fulfil their allotted missions and objectives. Further, the formulation of a National Security Strategy is necessary before a Defence Planning Guidance can be evolved. DPG also serves as the starting point for politico-military interface. It provides a geo-political framework for assessing military force levels and budgetary needs. Though military inputs would be necessary to formulate

defence policy guidance, it would essentially be a document prepared at the RM's secretariat with a broad range of inputs from political, economic, industrial, technological, diplomatic and other spheres. Thus the current practice of preparing directives purely by military officials would not reflect the true objectives of defence policy guidance. This will be an instrument through which the Defence Minister exercises civilian control and authority over the entire defence apparatus.

The DPG and National Military Strategy are two distinct documents and one does not replace the other. DPG has a distinct capability perspective that applies not only to the Armed Forces but also to the other organs of the Ministry of Defence. Therefore, DPG perspective engenders an integrated view of defence issues.

It is quite evident that our defence policy objectives would be a sub-set of our national security strategy. Further, our defence policy would guide military strategy, defence research and development, defence production and procurement and would also aim at making adequate resources available for defence. In addition it will cover many other facets of defence policy, some of which may be classified. The GoM Report of 2001 had recommended that RM's directive should be issued twelve months before the commencement of the next five year defence plan. This Directive forms the conceptual basis for the Defence Plan. It was also recommended that the Ministry of Finance should give a firm indication of the availability of financial resources for a period of 5 years, at least 6 months before the commencement of the ensuing Five Year Plan¹.

Therefore, the RM's directive for the Tenth Five Year Defence Plan (2002-2007) should have been issued one year earlier or at least in 2002. But it was not issued in time. It is believed that a draft directive was prepared by

the HQ Integrated Defence Staff (IDS) but its approval had been kept pending. Is it because it has not been legislated or is there no statutory obligation to produce this document like say the Annual Budget of the government? The last RM's Directive is said to have been issued in 1983 when Mr. Venkataraman was the Defence Minister. It has also been brought out by many observers that RM's directive appears on the scene too infrequently. General Bipin Joshi had also prepared a draft directive during his tenure and sent it to MoD for approval. But nothing came out of that. RM's Directive for the Eleventh Defence Plan (2007-12) should also have been issued in 2006 but apparently it has not been issued, thus highlighting the weakness in our joint and integrated defence planning processes and structures.

The defence of a nation state is intimately connected with its national security objectives. The objectives are generally spelt out in overall national security strategy, which contains both military and non-military aspects of security, a survey of threats, challenges and opportunities in the security and strategic environment. The US regularly publishes a National Security Strategy document (the last one was issued in March, 2006). Countries like China and Australia publish "White Papers" on defence. China issued its latest "White Paper" on defence in December 2006². However we are yet to evolve a clearly enunciated national security strategy document. Even the GoM Report observed that "*the defence planning process is greatly handicapped by the absence of a national security doctrine and commitments of funds beyond a year. It also suffers from a lack of inter-Service prioritisation as well as requisite flexibility*".

However, it is heartening to note that MoD has finally decided to evolve their long term defence planning based on a well defined national security strategy and objectives. Appearing before the Parliament's Standing Committee on Defence in April 2007, the MoD representative stated that

“The revised Long Term Integrated Perspective Plan (2007-22) is being prepared following a deliberate and integrated 'Top Down' approach by articulating National Security Strategy, National Military Strategy, National Military Objectives/Capability and so on. Such an exercise has been undertaken for the first time and is an extremely involved process with inputs from the three Services, MoD, NSA and various other agencies.”³

The document is expected to be ready by the end of December 2009. This underscores a number of very important issues. First, so far, defence planning has been resorted to without the benefit of a well articulated NSS and National Military Strategy. Secondly, the three Services have been evolving their plans based on their own individual view of threat perceptions. Thirdly, the approach of the armed forces has been to incrementally add on to the equipment and weapons systems rather than evolve joint military capabilities. And by the time the new document is ready, three years of the current 11th Five Year Defence Plan (2007-12) would have elapsed, thus causing further delays in the evolution of a joint and well integrated defence planning process.

It is believed that a DPG is also likely to be formulated soon and once DPG is issued, RM's Directive may become superfluous as it is likely to include all the contents of the Directive. DPG would most likely be a classified document and the frequency of its formulation should coincide with our defence planning cycle. This would introduce a certain amount of stability in our joint planning process. On the other hand, security and strategic situations do not always follow a predicted path (as the Kargil experience in 1999 and the military stand off with Pakistan in 2002 had shown) and it may be necessary to carry out a mid-term review. It is also normal to plan for certain contingencies, which may arise during the period of DPG.

As a corollary to the above, it also needs to be understood that defence capabilities take a very long period to fructify and therefore it is mandatory

that DPG should coincide with the Long Term Integrated Perspective Plan (LTIPP). LTIPP reflects the joint and single service capabilities to be evolved over a period of 15 years. The DPG would be a living document and it would be impacted upon by a number of factors. For instance, the security environment is not only driven by external factors, but particularly in the case of military capability, by the response of the external environment to the developments of one's military power and military strategy. Thus, DPG would also contain a long term guidance which would be reviewed and concretised in every plan period to make it contemporary with the emerging milieu of threats and challenges.

In case of the US, the Secretary of Defence exercises control by issuing a Defence Policy Guidance (DPG) which is a classified document. The DPG document is made with the advice of the Chairman Joints Chiefs of Staff (CJCS). The DPG is instrumental in initiating the Department of Defence's Planning, Programming and Budgeting System⁴. Another tool used by the Secretary is the Contingency Planning Guidance (CPG), which informs the CJCS of general and strategic areas of concern to the political leadership for which contingency planning should be carried out. It is prepared in consultation with CJCS, goes through the National Security Council and is approved by the President. Experience has shown that we need a joint and integrated defence planning system suited to Indian conditions. Our ad hoc reactions and planning for operations in Maldives and Sri Lanka bear witness to the absence of any coherent long term joint planning. Our experience in Operation Parakram shows that political purpose and guidance to the military has to be very firm and clear if military success and political objectives are to be achieved.

Awaiting Political Consensus on CDS

The Parliament's Standing Committee on Defence has been repeatedly questioning the government on progress regarding creation of the Chief of

Defence Staff (CDS). As a result of repeated recommendations of the Committee in their reports, the Ministry of Defence (MoD) had issued letters to National and State level political parties in March 2006 to begin political consultations with them on the issue of establishment of the post of CDS. In their 15th Report to Parliament, the Committee observed that since inordinate delay had already taken place, the Government must expedite the matter and come to a consensus for establishment of CDS, which is an urgent need to cater to the growing security challenges.

It is believed that the process of consultation with political parties has been initiated by issuing letters to National and State level political parties by the Raksha Mantri in March 2006 for obtaining their views on the establishment of Chief of Defence Staff. Further, reminders have also been issued in June 2006 and again in January 2007⁵. Replies from only four political parties have been received so far. Thus, continued procrastination in the matter would only add to the problems of evolving joint and integrated structures.

It needs to be noted that the GoM Report had observed “*capabilities of Armed Forces can be enhanced significantly, if rather than operating as three individual units, they operate with a high degree of jointness and in close tandem with one another in conduct of various tasks, including training. Modern warfare demands much higher degree of coordination in operations by all the three Services than ever before. Creation of CDS would promote greater jointness in the Armed Forces*”. Besides single point military advice, CDS was to administer the Strategic Forces and enhance the efficiency and effectiveness of the defence planning process through intra- and inter-Services prioritisation of acquisitions and projects. The institution of CDS was to be the first step towards a series of structural reforms. But in the absence of CDS the other reforms which have taken place also lack substance. What the MoD and the government need is an integrated view from an effective and experienced spokesman for our

senior military leadership. There has been generally an apprehension among civil servants and the polity that CDS may become too strong or vesting him with powers of central advice would dilute civilian control. There is also a lurking suspicion that CDS may also dilute the role of the three Service Chiefs. However, these apprehensions and observations are not valid as the task of CDS is clearly defined.

CDS would only command/administer those forces which are tri-service in nature, like Strategic Forces Command (SFC) and the tri-Services Andaman & Nicobar Command. He would also coordinate and resolve substantive inter-Service doctrinal, policy, planning and operational issues, which, as observed by the GoM, the Chiefs of Staff Committee (COSC) has been unable to resolve. The Services are very sensitive to their share of the budgetary pie. Historically, the budgetary allotment to the Services has followed a fixed pattern with their shares of the budget remaining the same. There has been little or no attempt at inter-Services prioritisation in planning and budgeting. CDS thus becomes an important facilitator for inter-Services prioritisation, joint force development, evolution and updating of joint doctrine, evolution of integrated perspective plans and joint military strategy.

It appears that the Standing Committee on Defence has given up coaxing the government for instituting CDS. Because, in its 16th Report, the Committee has opined that due to reasons advanced by the Government, it does not wish to pursue further its observation on the creation of CDS.

HQ Integrated Defence Staff: A Review

Based on the recommendations of the GoM report, an Integrated Defence Staff (IDS) structure was put in place by merging the erstwhile Directorate General of Defence Planning Staff and the Military Wing. It began functioning in October 2001. Even though HQ IDS has achieved

considerable progress in most of the areas of its defined mission, its integration with the MoD is only in form rather than in substance. For all practical purposes, HQ IDS is still a separate entity by itself and is not integrated into the MoD. If IPS officers and other cadre officers can be posted to higher level appointments in the Home Ministry, there is no reason why military officers cannot be posted to MoD or why civil officers cannot be posted in HQ IDS. This would be a right step for promoting integration.

Further, it is being argued that pending decision on setting up the institution of CDS, HQ IDS has been set up under the Chief of Integrated Defence Staff to the Chairman, Chiefs of Staff Committee (CISC) in 2001 to support the Chiefs of Staff Committee (COSC) and its Chairman in the optimum performance of its roles and functions, bringing together and coordinating several functions common to the Services. Planning functions, including the formulation of Long Term and Five Year Plans were brought under the Integrated Defence Staff. Strategic Forces Command, Tri-Service commands like the Andaman and Nicobar “theatre” Command have been set up to promote jointness and synergy in operations. The Defence Intelligence Agency was set up to coordinate intelligence inputs from the Service intelligence directorates and provides interface with the other intelligence agencies like Research and Analysis Wing (RAW), National Technical Research Organisation (NTRO), and Intelligence Bureau (IB). In the field of training several tri service institutions like National Defence Academy, Defence Services Staff College and College of Defence Management (CDM) have been brought under the Joint Training Committee of HQ IDS.

A review of HQ IDS's endeavours since 2001 would indicate difficulties being experienced in forging jointness and integration in planning processes and structures.

IDS is at present working on a Long Term Integrated Perspective Plan (2007-22). In the immediate wake of its establishment the first LTIPP for the 15 year period of 2002-2017 was to have been worked out. The same had been made and had received the approval of COSC and had been awaiting the approval of Defence Acquisition Council and Cabinet Committee on Security. But because of delays in approvals, mostly due to lack of coordination between Ministry of Finance (MoF) and MoD, LTIPP (2002-17) had to be shelved and replaced with the current LTIPP (2007-2022). Further, the Tenth Five Year Defence Plan (2002-2007) was approved in end December 2004, while it should have been approved at least sometime before the commencement of the plan. Funds asked by the Services and those allotted by MoF were at variance thus resulting in plan slippages. The Standing Committee on Defence observed in August 2004 that “*the Committee is not happy with planning mechanism in the MoD which has moved only at a snail's pace – a situation with no approved Defence Plan to speak of even in third year of the plan period*”⁶. This had led to overall uncertainty about the availability of committed finances for long term plans of weapons acquisition and modernisation of the Armed Forces. There has been no serious effort towards inter-Service prioritisation in the LTIPP. It continues to be largely a sum of the perspective plans of individual Services. This compels one to remark that the more things change the more they remain the same. If LTIPP is going to be just an amalgam of respective Service plans then it undermines the most important mandate given to CDS and HQ IDS.

However, as mentioned earlier the Eleventh Defence Plan is also going to suffer the same fate as the Tenth Plan since it has not been approved so far. The 11th Defence Plan projections were sent to the Ministry of Finance for consideration with the approval of Raksha Mantri in July 2006. In September 2006, MoF had indicated that it would be realistic to assume year on year increase in Defence allocations in the range of 8-10 percent for the purpose of initiating planning exercise for the 11th Plan, as against the

annual average growth rate of 12.35 percent per year indicated by Ministry of Defence⁷. Some suggestions were also made on certain operational aspects having substantial financial implications with the request that the Ministry of Defence review the same with the objective of rationalising expenditure. In October 2006 the Raksha Mantri had again written to MoF on this issue. The matter remains under examination in the Ministry of Finance.

The Parliament's Standing Committee on Defence in its 16th Report (released in April 2007) felt constrained to remark that “*the Ministry of Finance and Ministry of Defence should not shift the responsibility to each other; rather together they must approve the Eleventh Plan at the earliest, so that it does not face the same fate of Tenth Plan. This will further facilitate both the Ministry of Defence to plan their finance, equipment acquisition and utilise the allocated amount to the fullest extent in a time-bound manner*”⁸. The Committee was also perturbed because of the mismatch between the projection and budgetary allocation for the first year (2007-08) of the plan.

Coming back to the question of lack of integration and inter-service prioritisation: It appears that the Navy has already formulated a Maritime Capability Perspective Plan covering the period 2007-2022. And the other two Services are in the process of doing so. All the three plans are expected to be integrated into an LTIPP and its approval obtained from the Defence Acquisition Council by the end of October 2009. But the major question of disjointed planning still remains. How has the Navy formulated its Capability Plan without deriving the same from NMS and NSS? Would the LTIPP be really an integrated plan or just an amalgam of the three Service plans? Would the COSC be ever able to reduce the allocation of one Service and allot the same to the other Service for a coordinated and joint development of military capabilities based on a common vision of threats and challenges? For instance, if the Army feels very strongly that the Air

Force should have dedicated ground attack fighters like the A-10 or any other modern equivalent aircraft to provide close air support, then would the Army be willing to reduce its allocations and proportionately increase funds for the Air Force for this purpose? Similar argument can be extended to other military capabilities for attaining the goals of inter-Service prioritisation. Apparently, our defence planning structures and processes have not attained the required degree of maturity.

CDS or HQ IDS needs to be given the requisite degree of authority for inter-service prioritisation in joint capabilities programme development. Further, it can also be seen that despite the new structures like Defence Acquisition Council and new improved procedures for defence procurement the malaise of lack of joint and integrated approach in procurement remains.

Problems of Disjunction in Logistics

Procurement is the first major phase of logistics. In order to streamline defence procurement, a new Defence Procurement Procedure 2006 (DPP-2006) was introduced. This in turn was built upon the erstwhile DPP-2005 which itself was a review of DPP-2002. But in spite of the frequent reviews of DPP the capital acquisition planning has suffered from delays and a low percentage in attainment of the targets set out for procurement. One of the most important issues from the point of jointness has been the lack of coordination among the Services while procuring common weapons systems and equipment common to them. They have resorted to independent procurement of common systems instead of planning joint procurement to obtain the best value for money, reduce tendering cost and minimise processing time. This audit observation has been made by the Comptroller and Auditor General (CAG) of India in his Report on Defence Services for the year ending March 2006 and presented to Parliament in May 2007⁹.

The Defence Procurement Procedure for capital acquisitions of June 2005 (DPP-2005) was especially formulated to include a clause which stressed on the Services to evolve Joint Service Quality Requirements (JSQR) for equipment common to the three Services. The same clause has again been emphasised in the latest DPP-2006. However, while submitting requirements for medium lift utility helicopters, common to the three Services, no JSQRs have been evolved even though the role envisaged for the helicopters is the same. There is a need to formulate JSQRs to gain synergies and best value for the money spent. Further, not long ago the Army and the Air Force had purchased UAVs from the same country/vendor but at different rates, thus allowing the vendor to exploit the disconnection between the services. And the process of independent procurement of UAVs has been on for over ten years (It is under import since 1996). Joint procurement would have definitely resulted in *'minimising delays, economy in procurement and avoided placing of repeat orders'*.

There seems to be a pattern in acquiring common systems independently; Oxygen-cum-Communication Mask worn below the helmet by the pilots of the Air Force and Army Aviation was procured independently by the two Services. The Army procured the Mask ex-import at four times the cost at which it was procured by the Air Force indigenously. Similarly, Sniper Rifle SVD for Special Forces was obtained by the Army and Air Force independently, which resulted in avoidable excess expenditure. In 2003, the Army took almost a year to evaluate Underwater Diving Equipment while the same had been acquired by the Navy much earlier in 1999¹⁰. HQ IDS was expected to streamline the process and evolve JSQRs for common equipment but it has not been able to overcome the disconnection between the Services because of attitudinal and structural issues. However, it appears that in December 2006, HQ IDS had taken action to constitute an Inter Services Equipment Policy Committee (ISEPC) for procurement of

systems and items common to the three Services. ISEPC would also look into the issues of developing JSQR.

While the MoD has recognised the difficulties being experienced in the procurement system by deciding to institute a committee (in December 2006) to look into re-structuring of the Acquisition Wing, it is equally necessary to look at the other aspects of the defence logistics system which need to be integrated and harmonised. After procurement, the second phase of logistics involves transportation, storage, inventory control, and distribution and supply management. And the third phase involves sustainment of the defence forces through maintenance, replenishment, and servicing of equipment and weapons systems. All these phases and functions of logistics are amenable to a joint and unified approach. Merits of a common Defence Logistics Agency (DLA) or Defence Logistics Organisation are too well known to be repeated here. The US and UK armed forces have such organisations. The Chinese People's Liberation Army (PLA) has even introduced joint logistics units at the theatre level with effect from October 2004 to cater to all the logistics needs of the three Services at the operational level. Pakistan for its part has a National Logistics Council which aims at unifying the entire national logistics effort.

Mr. Arun Singh had observed as far back as 1989 that “Enormous sums of money are being spent (and often wasted) on maintaining individual logistics support in common items among the services and also developing management approaches (including computerisation). A Defence Logistics Agency could be set up to standardise and integrate to the extent feasible.” However, surprisingly, the need to institute a DLA failed to find mention in the GoM Report even though the necessity for a new acquisition organisation was highlighted. Even the CAG in his Report of 2007, while recommending the need for an integrated defence acquisition

organisation encompassing all the functional elements and specialists in defence acquisition under one head, omitted to recommend the necessity of a DLA under one head, to unify all the logistics functions of the three services. DLA would integrate (besides procurement) maintenance and repair systems, military depots and transportation between the three services. It would also liaise with the civil sector for integration of civil resources. It would also exploit tools of IT for integrated logistics management, with emphasis on interoperability and compatibility between the three services. There is considerable scope for privatisation of defence support facilities. The goals of outsourcing, which is acquiring increased salience among the Services, can be best attained by following an integrated approach. Therefore, there is a need to create a DLA which could be under HQ IDS or it could be a separate entity under MoD.

Progress in Promoting Unified Thinking

The promulgation of a joint doctrine (albeit in classified domain) in May 2006 was a significant achievement in implementing the mandate given to HQ IDS. The joint doctrine has been formulated through an elaborate process which involved a number of training institutions of the armed forces and various think tanks dealing with military and security issues. It complements the existing doctrines of the three services. The Indian Army had released its revised doctrine consisting of two parts in 2004, with Part Two being classified. The Indian Air Force also has a doctrine in the open domain while the Navy had released its maritime doctrine in June 2004. It can be said that a joint doctrine should have been formulated first and then the respective Services should have derived their doctrines from a common military doctrine. Yet this does not dilute the importance of having a joint military doctrine almost after five years of the existence of HQ IDS. Though a critical appraisal of joint doctrine cannot be made because it is classified, it is believed to be generic in nature. Hopefully, the joint

doctrine would enable us to evolve joint operational concepts and precepts at field, army, and theatre levels and even at tactical levels so that jointness can be practiced at cutting edge levels.

A doctrine is distilled wisdom which has been collected based on past experiences and thought processes evolved over a period of time. Joint doctrine is an authoritative guidance on how joint military operations should be conducted in a given set of military circumstances; however, it requires judgment in application. It is also dynamic in nature as it would continue to be impacted upon by a number of factors. The dominant factors impinging on evolution of doctrine would be the dramatic changes occurring in technology and changing nature of warfare and conflict. The release of joint doctrine was also an indication to India's potential military competitors that the country is well prepared militarily and that the value of its conventional deterrence stands enhanced. While releasing the Joint Doctrine last year Mr. Pranab Mukherjee, the then Defence Minister, had remarked that “*there is a need to evolve a road map towards furthering the process of joint commands so as to make resources available for modernisation*”¹¹. But considering the procrastination in instituting the post of CDS, the possibility of creating joint theatre commands like Andaman and Nicobar Command seems to be unlikely in the short to medium term.

Another step to promote joint thought among the services and security community was the creation of Indian National Defence University (INDU). Concept of INDU is based on similar institutions existing in countries like the US and China. The INDU is expected to be a multi-disciplinary “centre of excellence” in the country in education and research on national security issues. INDU is proposed to be an institution of national importance. Consequently, it was to be established by an Act of Parliament. Additional Colleges/Institutions have been recommended to be created for education and research on national security and

technological issues. As part of these new Colleges/Institutions, the Committee (headed by K. Subrahmanyam) had recommended a new think tank for defence and security issues, based on GoM Report on "Reforming the National Security System", with a focus on policy-oriented research. The recommendations also included the provision for the establishment of a War Gaming and Simulation Centre. But five years after acceptance of recommendations INDU has still not fructified. Even though funds for INDU have been earmarked and both Haryana and Punjab have offered land for the purpose no meaningful progress has been made in this regard. This can be contrasted with Pakistan having announced in March last year that it would create a National Defence University and by March this year it was inaugurated. The inaugural function included an Indian observer also.

Further, while the government has been able to provide land for Special Economic Zones and pass necessary regulations to govern them within a short period of less than a year, a simple act for establishing INDU has not been legislated even five years after the need being felt for it. Similarly, at the military level while some war gaming and simulation models have been made at battalion or tactical levels, joint war gaming simulation models at operational levels are yet to be evolved. Even a small entity like Taiwan has joint war gaming simulation models (including necessary software) at theatre levels to carry out simulation and practice to hone skills in joint warfare and improve the efficiency of the military machine through learning. Therefore, it can safely be said that the knowledge age is dawning at a glacial pace in the Indian Armed Forces.

Additionally, a Centre for Joint Warfare Studies has been formed in September 2007 under the aegis of HQ IDS to promote jointmanship among the Services, Ministries and Intelligence Agencies connected with National Security. It will conduct studies and research work in Joint war-fighting. In addition, it will conduct orientation courses/ capsules for

various ministries/agencies (including procurement agencies) connected with HQ IDS/Services. The centre is still in an embryonic form and is yet to take off. However, “Purple Pages”, a journal promoted by HQ IDS, has started its publication with the objective of promoting joint and unified thought processes, concepts and precepts.

Progress of Jointness in Information Age

Coordinating the intelligence effort of the nation along with defensive and offensive information on warfare activities has been acquiring increasing salience in the current knowledge age. Considerable progress has been achieved through the creation of a Defence Intelligence Agency (DIA), which coordinates the intelligence effort of the three services and provides a common interface with the civil intelligence community. Director General DIA is also a member of the Intelligence Coordination Group, which works under the National Security Advisor. It prepares the reports for national planners. DIA is responsible for overall supervision of all the military attaches in India and those posted abroad. DG DIA is also a member of the National Information Board and member of the Apex Committee on Satellite Surveillance Board. He also controls the strategic assets like Defence Imagery and Photo analysis Centre (DIPAC) and SIG INT. The DIA also coordinates certain aspects of information security and information warfare. DIA functions under the aegis of HQ IDS. Progress has also been made in the area of evolving a joint information warfare doctrine.

The Standing Committee on Defence noted in May 2005 that the Directorate for Information Warfare, under an Additional Director General (created in August 2003) as part of the Military Operations Directorate of Army HQ, had been performing the functions of formulating policy and guidelines on all aspects of Information Warfare and monitoring its implementation in the Army. It was evident that Information Warfare had a

very vital role in the operations of the Air Force and Navy as well. Therefore, the Committee had recommended that this Directorate should be a tri-Service body and should coordinate closely with the Ministry of Home Affairs and intelligence agencies so that information received from them could be effectively utilised not only against external enemies, but also against insurgent groups operating in the country.

Thus, a Defence Information Warfare Agency (DIWA) was formed to handle all aspects of Information Technology and Information Warfare (IW) including psychological operations, cyber war, network security, electro-magnetic spectrum and sound waves. Though the three Services have separate set ups for such activity, DIWA is the nodal agency and apex policy-making body to coordinate the efforts of the three Services. The psychological operations aspects of IW, though forming part of DIWA, are also coordinated by DIA. A joint information warfare doctrine has also been formulated to serve as a base document for IW activities. DIWA has been providing military inputs through the Chief of Integrated Staff Committee to National Security Council and the National Information Board which coordinates the joint and integrated effort at national level¹². Recently, DIWA has acquired a new designation, i.e. Defence Information and Assurance and Research Agency; the functions, apparently, continue to be the same. At the national level a Computer Emergency Response Team (CERT-In) exists to evolve suitable responses to cyber attacks. Services are also coordinating their effort, for instance through constituting similar teams at their own level; for instance CERT-A established by the Army.

Perception Management – Lack of coordinated and Unified Effort

Another area where coordination between military and civil agencies has been weak or non-existent has been in the area of perception management

operations and activities. It was only during the Indo-Pakistan war of 1971 that a High Power Committee was formed to shape perceptions of the international community to elicit a favourable response to India's actions against Pakistan. Our record of shaping perceptions during the Kargil conflict and Operation Parakaram has been somewhat mixed. There is a need to evolve suitable organisations and structures at the apex level, say under the aegis of National Security Council and thereafter at HQ IDS level to guide the perception management activity. Existing organisation and resources with the Army for carrying out psychological warfare activities (or psychological initiatives when it comes to dealing with an internal target audience, for instance in insurgency affected areas) are very meagre and the approach to the same is generally handicapped by multiple agencies attempting to carry out similar tasks without adequate coordination. Perception management operations need institutional and doctrinal innovation and support, which is lacking in the current dispensation. Perhaps this subject would be included for study by the proposed INDU. Impact of information age has created complexities in managing perception of both domestic and foreign audiences. The Military needs to disseminate information about its own activities to the media, and for that it needs public and media support in its efforts during both peace and war. Thus, a joint and integrated effort would ease the difficulties of shaping perceptions in the current knowledge age.


Conclusion

Jointness and integration are the same as unity of effort. Inter-service cooperation and economy of effort are two of the most important principles of war which provide synergy to our military endeavours. The primary aim of defence reforms was to achieve unity of effort among the three Services and other supporting agencies. There is an absence of common vision for threat perception amongst the Services, which is likely to be overcome by

articulating NSS and NMS which may happen within the next two years or so. DPG is also likely to be formulated in the same time span which would guide the three services and other defence support agencies and departments towards achieving common goals. The most important reform, of creation of CDS, which would resolve many inter-Service issues, has not been implemented. Though some progress has been made on the issue of integration with the MoD, IDS still remains substantively outside the structure of MoD. The long term perspective planning as well as medium term defence planning is yet to take off in the manner desired and as mandated in the GoM Report. Contentious issues like inter-Service prioritisation in planning, acquisitions and projects have not been addressed in a meaningful manner. The partial implementation of GoM recommendations have the potential to create dissonance rather than moving towards inter-Services harmony amongst the Services and supporting agencies.

Though many integrated structures like DIA, DIWA and DAC have been created, the culture of jointmanship and integration is yet to take firm roots among the Services and defence supporting agencies. Jointmanship does not mean suppressing the unique and distinctive war fighting capabilities and culture of the individual Services. In fact, it thrives on such uniqueness. However, the quintessence of jointness lies in achieving a degree of flexibility to fulfil a common goal.

It is also recommended that a quadrennial review of defence reforms as well as of the defence effort should be carried out by the Parliamentary Standing Committee on Defence to monitor the progress achieved and make further recommendations for improvement of the defence effort. Alternatively, a comprehensive legislation on the lines of the US Goldwater-Nichols Act should be introduced so that statutory obligations compel the political leadership and the civilian bureaucracy to pay

adequate attention to the defence effort in a time bound manner besides “forcing” the three Services to become more “joint and integrated” in their approach towards the defence of the realm. 

Notes

- 1 'Reforming The National Security System –Recommendations of Group of Ministers' at www.mod.nic.in/newadditions/rcontents.htm.
- 2 'The National Security Strategy Document of the United States of America' at www.gov/nsc/nss.html. 'China's White Paper on Defence' titled 'China's National Defence in 2004' at www.china.org.cn-ewhite. (Published since 1998.)
- 3 Standing Committee of Defence (Fourteenth Lok Sabha), Sixteenth Report, April 2007, pp. 46-48.
- 4 Douglas Lovelace Jr., 'Unification of the US Armed Forces: Implementing the 1986 Department of Defence Reorganization Act' pp. 21-23 at www.carlisle.army.mil/ssi/pdf/PUB324.pdf.
- 5 Standing Committee of Defence , Fifteenth Report , [Action Taken by the Government on the Recommendations contained in the 11th Report of the Committee (Fourteenth Lok Sabha) on the Demands for Grants of the Ministry of Defence for the year 2006-07], pp. 82-83.
- 6 Standing Committee of Defence,(Fourteenth Lok Sabha,2004-2005) , First Report, August 2004, para 48.
- 7 Status of 11th Defence Plan of Sixteenth Report, n. 3, pp. 55.
- 8 N. 3, pp. 53.
- 9 Report of the Comptroller and Auditor General of India for year ended March 2006, Union Government (Defence Services) Army and Ordnance Factories, No. 4 of 2007 (Performance Audit), pp. 1-2.
- 10 For instance n. 9, pp. 9-10.
- 11 'First Ever Joint Doctrine Released' The Hindu, May 18, 2006. Also at <http://www.hindu.com/2006/05/18/stories/2006051818900900.htm>.
- 12 Saikat Datta, 'Forces get ready for Information War' The Indian Express, February 23, 2003.

Budgeting for Desired Defence Capability

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The Defence procurement policy and procedure as brought out in DPP-2006 (Defence Procurement Policy, 2006) indicated that for policy decisions relating to acquiring of weapons and systems, we are basing them on capability planning in the context of operational requirements. It talked in terms of existing 'capability gaps', and examination of alternative means of overcoming them, while processing a case for policy decision. Capability planning has various implications from resource allocation angle and particularly for defence budgeting, which are yet to be addressed in a systematic manner. An attempt has been made below to highlight some of the issues and the possible ways to tackle them.

Budgeting as a means for obtaining optimum defence capability would call for reform in the defence budgeting process in three important aspects. First, the budgetary process has to be changed so as to treat defence budgeting as a part of decision making process for optimum resource allocation for achieving specific defence capabilities. The process should be so designed that choice could be exercised in allocating limited means for achieving identified 'objectives' with a view to achieving maximum effectiveness in defence spending. To develop optimum defence capability, the objective should be clear.

Second, the budgeting process should be closely linked with the defence planning process. Budgeting should be treated as the execution portion of

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defence planning cycle, so that there is close coordination between capability planning and budgeting. This will call for extended time horizon for defence budgeting as also change in the format of defence budget.

Third, attention should be focused on the end products of defence budgeting through the concept of programmes for capability building, making it an output-oriented budget.

In this context, it is good to remember, that for optimum capability building through objective-based defence planning, a relationship is required to be established between the identified objectives and the various activities to enhance military capabilities.

Military capabilities are capabilities to perform specified tasks. Therefore, the basis for resource allocation decisions in the capability based Defence Plans, should be military tasks that are required to be performed. It is the military tasks conceived in the framework of objective- based approach that would provide the basis for development of programmes for those tasks. Programmes by themselves have no sanctity, unless they are linked to the performance of military tasks that have been identified as necessary for carrying out national security policy. There should be explicit link between aims of policy and military forces required to achieve the aims. Programmes should be considered as providing that link.

In the capability based approach, defence forces must be manned, equipped, and trained to carry out the identified military tasks, for which they are assigned. So the programmes should be developed on a composite basis, taking into account all the elements required to develop capabilities to carry out specific tasks. Clearly, in the capability based approach, programmes cannot merely be conceived as equipment acquisition programmes, as we often tend to do, and make our Defence Plans as equipment acquisition plans. Defence Plans have to be much more than that.

So, what we are following today is a truncated approach to defence planning, which may not be the right approach to develop optimum defence capability. Because of the basic importance of military tasks to provide the building blocks for defence programmes, there should be an adequate planning and resource allocation mechanism in Service Headquarters. We have not adequately emphasized upon it, as our planners have mostly concentrated on acquisitions of equipments and systems.

Programme planning and budgeting for capability building to achieve identified objectives have to take place at the level of Service Headquarters, within the overall guidance provided by formulation of military policy and strategy at the Ministry and higher level. The policy objectives, however, cannot be set at the Service Headquarters level.

Planning and Programming

When Arthur Smithies, in his seminal work in the nineteen fifties, first conceived of budgeting as a part of decision-making process, he conceived a process consisting of six stages: determination of policy objectives, planning, programming, budget formulation, budget or program execution, budget or program review. What was the role of planning in the decision making process, as conceived by Smithies? In his words: “Planning, as the term is used here, means the preparation of alternative plans that will further particular policy objectives in varying measure and are within the reasonable bounds of feasibility.”¹ His definition of programming was “Programming denotes a further step in the direction of finality and feasibility, and may involve selection among alternative plans or a combination of elements from a number of plans.”²

Basic decisions that greatly influence the size of budget are required to be taken at the programming stage. To quote him once again, “the distribution of the defense program among the three Services are budgetary questions,

since the national objective is to obtain the most efficient use of resources devoted to defense. While these questions are largely settled before a budget is prepared, the programming decisions should be based on the relative costs of the various defense alternatives.”³ Costing of programmes again assumes central importance both for decision making and budgeting. That is why for budgeting for defence capability, programming stage should be properly designed and should precede budgeting.

Arthur Smithies has been quoted for two reasons. First, to indicate that in quest for rational allocation of resources, setting of policy objectives followed by planning and programming are essential steps, before budgeting is attempted. Secondly, these steps have their validity in any rational system of decision making in resource allocation, and were visualized much before PPBS was introduced in US Defense in the sixties. One may criticize PPBS for various reasons, but that does not make the concept of planning and programming invalid. Their validity is derived from need for rational allocation of resources for achieving optimum defence capability.

Force structure and Capability Building

The main determinant of defence capability is the force structure. So force planning becomes the key element in capability planning. When Program Budgeting or its variant Programme, Planning and Budgeting System(PPBS) was introduced in sixties in U.S. Defense, the Five Years Defense Program (FYDS), ten Major Force Programs (MFPs), were its central foci. Defence budgets were allocated among these MFPs to achieve optimal allocation of resources. The ten MFPs were so defined that they expressed the principal missions the military needed to perform.

Without defining the missions and tasks, and allocating resources for carrying the military tasks, capability planning cannot be attempted. The

most important ingredient of capability planning is force structure planning. In India, we are yet to attempt force structure planning through our five year plans. The main drivers of cost in defence are the strength and composition of forces. If we want to use budgeting for building up desired defence capabilities, then an affordable force planning should be its main focus for all the three Services.

In determining appropriate force structure, there has to be a well conceived and well debated defence strategy. National security strategy would have to relate 'means' to 'ends'. There is no strategy in the absence of choice about 'means' and 'ends', or their relationship. In a democratic society, difficulties are often faced in coming to grips with the 'ends' rather than the 'means' of strategy. This is why there is absolute necessity of periodic comprehensive Defence Reviews, in defining the 'ends' and establishing relationship between 'ends' and 'means' towards formulating a defence strategy and broad allocation of resources in a multi-year perspective. We are yet to undertake such a review. It may be worthwhile in this context to quote from the report of the Estimates Committee of the Parliament (1992-93) on defence force levels: "The committee is apprised that the force level under the Ministry of Defence is determined by the dynamic perspective of the security scenario coupled with the annual availability of resources within the plan period, competing demands of other priority sectors, the technological developments and other systemic inputs. They are shocked to find that the question of force level which is inherently linked with perspectives on national security should be dealt with on such vague and unpredictable considerations (emphasis added)."⁴ The issue is still unresolved.

Policy decisions regarding broad military tasks and missions to be aimed at are to be taken to provide a basis for approving a force level and a force structure, which can be addressed through a Defence Review - which is long overdue. Nothing is more urgent than having a Defence Review from the point of view of public interest and policy, if the government wants to address the unresolved issues as brought out in the Report of the Estimates

Committee of 1993 on defence force levels, manpower etc. Without it defence capability building may take an ad hoc character and may not meet the desired objectives. Naturally, defence budgeting would also take an ad hoc character, as it is very much evident.

Budgeting for Defence Capability and Budgeting for Modernisation

Budgeting for defence capability has to have a close link with strategic planning process for national security. Resource allocation under capability based planning would look for capability gaps on the basis of objectives to be attained. Budgeting should aim at allocating funds on a priority basis for meeting the capability gaps, based on strategic consideration. There should be a close link between Defence Strategy and Defence Budgeting. In a sense defence budgeting for capability is defence strategy. This is because defence capability building is not done for its own sake. Capabilities are developed to achieve national military objectives and operational objectives, and budgeting is the means to do so. Defence budgeting has to be viewed as a resource allocation process for building up required military capability for carrying out military tasks based on operational objectives. Important elements of defence capability building viz. manpower, training, ammunition and various other stores meant for operation and maintenance purposes, are in the revenue side of defence budget. *When capability building is the objective, the entire defence budget has to be considered for allocation to develop specific defence capabilities.* In capability planning major emphasis is given on operational concepts and operational challenges and resource allocation has to be done on that basis.

Capability planning and Programme Budgeting.

Programme Budgeting (PPBS) introduced in 1960s in USA laid the foundation for capability-based planning. While it has undergone a number of changes over the past four decades, but the core element and the

basic process still provides the basis for allocation of resources for capability building. After the operation of PPBS for nearly two decades, many analysts pointed out that the first 'P', which stood for strategic planning, was missing. Some of the reforms brought about in mid-eighties, were really concerned with the front end of planning - meaning strategic planning.

The Group of Ministers (GoM), in their report on Reforming the National Security System (2001) stated that, “A need has been felt for a review of the form and content of the Defence Services Estimates and the expansion of the budgetary classification to *promote programme based budgeting*, while ensuring compliance with security requirements (Para 6.52).” They also stated that “optimal allocation of resources cannot be achieved unless greater emphasis and attention is given to the *process of budget formulation* and implementation, including forecasting, monitoring and control (Para6.51).” But they did not emphasize the need for strategic planning and the need for linking budgeting process to it. In fact without it, budgeting process cannot be improved.

Unfortunately, the GoM did not go into the implications of adopting programme budgeting nor did they emphasize that programming process should precede budget making to bring about optimal allocation of resources. As David Novick pointed out that “planning and programming are aspects of the same process; they differ only in the emphasis.”⁵

Planning here does not mean the Five Year Plans, as we formulate them, a list of schemes. It is an activity concerned with selection of best course of action among various alternatives given the limitation of resources. To quote Novick again, “*Planning* is the production of the range of meaningful potentials for selection of a course of action through systematic consideration of alternatives. *Programming* is the specific determination of the manpower, materiel, and facilities necessary for

accomplishing a program. In addition, except in the very short term where dollars are in effect 'given', programming entails interest in dollar requirements for meeting the manpower, materiel, and facility needs.”⁶

By adopting the programme budgeting concept in this sense, budgeting for desired defence capability became possible. The GoM did not get into these aspects of programme budgeting. Thus, a great opportunity of reforming the defence budgetary process in India to develop defence capability was lost. They got more concerned with defence procurement process, with a view to expedite it and recommended organizational changes - which were promptly adopted. Procurement planning cannot substitute for defence planning which calls for consideration of alternatives to achieve defence objectives. Without strategic planning to back it up, defence procurement takes an ad hoc character.

Defence Capability Plan and Defence Budgeting

Budgeting for desired defence capability would very much be dependent on a well-conceived Defence Capability Plan. Till the 10th Defence Plan we have not specifically adopted capability based planning in defence. The aim of the Five Year Plans has been to modernise defence forces. The projections of the Ministry of Defence for 10th Plan were reviewed thrice between March 2003 and July 2004 bearing in mind the needs of defence modernisation. As per 11th Report of the Standing Committee on Defence on Demand and Grants (2006-07), the Ministry of Finance had finally agreed in principle to the projections made by the Ministry of Defence of Rs. 4,18,101 crores for the 10th Defence Plan 2002-07. “However, the total allocation for the 10th Plan on the basis of annual plan allocation comes to Rs. 3,64,000 crores. Hence, there has been a gap of Rs. 5,41,000 crore between the indicative figure given and the total allocation made by the Ministry of Finance for the 10th Plan.”⁷ This in fact, with reference to original projection, was around Rs. 1,29,000 crores.

It is clear that the projections made by Ministry for the plan are not taken very seriously. In capability based planning there has to be a closed link between planning and budgeting as the desired capabilities are required to be achieved within a given time frame, to meet specific challenges. So the most important lesson for budgeting for capability building is that projected five year budget should have in-principle approval from the Government, say of the Cabinet Committee on Security(CSS). It cannot be left to be a debate between Ministry of Defence and ministry of Finance. Capability Plan should be based on it.

It has been reported keeping in view the experience of 10th Defence Plan, the 11th Defence Plan (2007-12) has been drawn up keeping in view the financial constraints with the aim of filling up defence capability gaps. The aim and objectives to be achieved in the 11th Defence Plan by the three Services, as intimated by the Ministry of Defence to the Standing Committee on Defence while discussing Demands for Grants 2006-07, are briefly as under:⁸

- Army - Development of capability to attain military objectives in a short, high intensity war against nuclear backdrop. Continued up gradation of capability for countering proxy war/ insurgencies and other emerging internal security challenges.
- Navy - Impetus on improving the capability in the area of air-borne maritime surveillance, anti-submarine warfare, air defence capability through induction of aircraft, integral helos and UAVs (Unmanned Armoured Vehicles). Arresting the force level decline of submarines and networking platforms for more effective maritime operations.
- Air Force - The formulation of 11th IAF Plan (2007-12) has been driven by the imperative of keeping an equal focus on several vital

issues: strategic reach, enhancement of firepower of combat forces, enhancement of air lift capability and operating infrastructure with due regard to the perceived security concerns and technological environment. The broad thrust of the plan has been on containing the adverse effect of force depletion to the extent possible.

What confuses a layman is that goal of capability planning for each Service is different. The element of 'jointness' in capability planning is missing. While Army would be developing capability to attain military objectives "in a short, high intensity war", Air Force in its capability plan does not mention anything of this "high intensity" war or how it would support Army to attain military objectives in such a war. The thrust of the plan is containing adverse impact of "force depletion". Navy in its capability plan aims at all round improvement in capability and arresting force level decline but does not mention about developing specific capability based on operational concepts. Budgeting for each Service based on this kind of planning would have different thrust and would not lead to optimal allocation of resources for attaining strategic objectives.

Defence Strategy and Capability Building

Defence strategy, force planning and capability building are closely interrelated. Deliberations and methodology adopted for capability planning in USA in the context of Quadrennial Defence Review, 1997 (QDR '97) as also subsequent QDRs, clearly indicates the interrelationship. The QDR took a "capabilities analysis" perspective by emphasizing the need to have operational capabilities for a highly diverse set of military contingencies. It drew on the ideas in Joint Vision 2010 and revolution in military affairs.

But equally important, the capability planning in QDR'97 was based on the assumption that defence budget was likely to remain constant in real terms

during the plan period. For capability planning the assumption about likely availability of budgets for next five years or more is absolutely essential.

If it is expected to grow then the assumption about the rate it is likely to grow annually at is very important for capability planning. Assumption might relate to real term growth in defence budget and if that was not possible, growth may be assumed in numerical terms. For defence planning in India, it will require decision at the level of Cabinet Committee on Security (CCS). Finance Ministry on its own cannot give this kind of commitment. So the most important point relating to budgeting for defence capability is that it calls for long term budgeting.

In Australia, for example, the 2000 Defence White Paper committed the Government to increase defence spending by an average of 3 percent real growth a year from 2000-01 to 2010-11. In 2006, the Australian government decided to increase defense spending by 3 percent in real terms per year until 2015-16. Because of the long term commitment of funding it became possible to earmark \$2.2 billion to acquire heavy airlift capability enabling rapid deployment of combat vehicles, helicopters and supplies, as also to earmark \$1.5 billion for a ten year period for networked Army and increase in its size.⁹

Long Term View of Funding is Necessary for Determining Affordability

When considering phasing out of two or more new aircraft, the analyst may have to look 20 years or more into the future to have some assurance that he is recommending an affordable acquisition plan since, “In the long view of fighter modernization, long-term averages of budgets and expenditures assume more importance than what happens in the next year or two.”¹⁰ Affordability is assuming increasing importance as a design consideration for new fighter aircraft, even in US defense considerations.

One cannot confidently predict the size of future defence budgets. But it is not impossible to make projections about allocation for defence and the likely share of Air force, Army and Navy keeping in view past trends of allocation for defence budget and the share of respective services in the defence budget. Any projection for defence budget for next ten years, assuming more than 9 percent annual growth on the present level, given the operation of FRBM Act, would appear optimistic. In making projections for long term one has to make conservative estimates.

It may not be possible to maintain the present high level of allocation for capital expenditure which has now touched almost 43 percent of defence budget, as no rationalization of expenditure on support services has taken place. Keeping in view past trends, percentage of allocation for revenue budget would have to increase from the present levels, particularly with implementation of recommendations of Sixth Pay Commission. Without change in force levels in terms of manpower, it may be difficult to sustain a capital budget of more than 35 percent on the average during next ten years. One can even consider the possibility of sustaining a capital budget at 37-38 percent with changes in force level and other reforms during next ten years.

On the basis of such possibilities one can attempt to calculate likely availability of funds for various segments of defence capabilities. For this, each Service has to work out the competing needs for capital expenditure out of its share of capital budget and the affordability of various aspects of modernization. For the Air Force, for example, in the current context for capability building, one has to assess broad possibility of affordability of fighter aircraft modernization.

Assessing Affordability of Force Structure

We have avoided issues relating to force structure as we did not have a long

term consideration of affordability. For example, in the Air Force there is a concept of high- low mix. High-low mix refers to buying some aircraft that are highly capable and highly expensive (the high side of the mix) and some that have lesser capability and are of low cost (low end of the mix). It is recognized that not all aircraft in a total fighter force posture need to have comparable capabilities. Because of reasons of total cost, it is expected that majority of force will consist of “low-end” aircraft; these aircrafts are designed to be “general purpose” in character.

Buying a force consisting only of specialized “high-end” aircraft will reduce the total force size significantly unless allocation for air force is increased significantly. Though our air force evolved into having a 'high-low' in recent debates this aspect has been ignored. SU-30MKI is a high-end aircraft which is also being 'produced' in the country. Mirage 2000, Mig 29, Jaguars are all high end aircrafts. From the recent Request for Proposals for 126 aircraft, it is obvious that these would fulfill the role of the 'high-end' aircrafts. Then which one would be in the 'low-end' of the mix? Certainly not the LCA which will cost four to five times that of updated MiG 21 and much more capable. Perhaps, are we planning to have a smaller size air force structure? But there has been no debate on this in India.

No country, however rich, can do without this kind of debate as the question of affordability in capability planning, is a must. For example, in mid-nineties when U.S. Air Force was considering various options about the force mix in fighter aircraft, in the context of future induction of F-22 fighter which was under development, one point that came up repeatedly into consideration is the high cost of the aircraft and its likely impact on US air force structure. As one analyst, bringing out the nature of choice that has to be made, put it as, “For a given level of modernization funding, each \$10 million increase in the flyaway cost of the multi-role aircraft subtracts three to four wings of force structure. As it buys more expensive aircrafts,

the Air Force must weigh the capability of each individual aircraft against the desirability of having a larger force. Acquisition of a \$45 million multi-role fighter does not appear consistent with maintaining a force of 20 wings or more, particularly since even typical procurement growth in the F-22 program would subtract about two additional wings from each force structure that could be envisaged on the basis possible range of future funding of U.S. Air Force.”¹¹

Each Service has to consider this kind of trade-off while modernizing its forces because resources are limited. We do not seem to be making any deliberate choice in this regard and leaving the force structure to evolve out of the normal process of induction of new equipment as part of modernization effort and de-induction of equipment on completion of their service life. This is particularly true in case of Air Force, as would be evident from following two excerpts from the Report of the Standing Committee on Defence of the Parliament on the Demands for Grants (2006-2007). In reply to questions raised while examining Demands for Grants for 2005-06 regarding Air Force squadron strength, the Ministry of Defence in their action taken note said, “The present squadron strength of Air Force is 37 against the authorized strength of 39.5 squadrons. With the planned inductions of SU-30, Jaguar, Multi Role Combat Aircraft, Light Combat Aircraft and phasing out of certain aircraft during 2005-2017, the Combat Squadron strength at the end of X, XI and XII Plan period is expected to be 29, 34 and 36 squadrons, respectively.”¹²

One is left to wonder if squadron strength of 29 is considered adequate at the end of Xth Plan, why is it allowed to go up to 36 at the end of 12th Plan when more advanced combat aircrafts would be in the inventory. Or, if the desired squadron strength of Air Force is 36, then why is it allowed to fall below that level in 10th and 11th Plan period. The calculations undergo change when a reply is given on this very issue when the Demand for Grants for 2006-07 is discussed, as the following evidence given by the

Ministry of Defence would show: “by the end of the Eleventh Plan, we will be reaching 31.5 squadrons, and by the end of the Twelfth Plan, we will be reaching 26.5 squadrons. However, by addition of MMRCA, these 126 aircraft will go to make six squadrons. Starting from the Eleventh Plan onwards, progressive increase in squadrons would take place. We expect that at the end of the Eleventh Plan, we would have approximately two squadrons, therefore, rising by about 33.5 and at and at the end of Twelfth Plan, rising by six squadrons, that means, making it 32.5 squadrons with the MMRCA.”¹³


From the affordability point of view, for the Air Force to maintain a 36 squadron or more of fighter aircraft, a general purpose aircraft like MiG 21 on a new platform, though more capable, with cost not more than 20 to 25 percent over the updated MiG 21s, may have to be there in the inventory. If this option is not feasible, then from affordability point of view squadron strength has to fall. One has to decide about optimum squadron strength of air force from the affordability point of view keeping in view not only the acquisition cost, but more importantly the maintenance and operation cost which are often ignored. This would not help in defence capability planning.

The most important thing in budgeting for desired capability, would be to examine what are the options available within a budgetary allocation, which in real terms may not grow by more than three or four percent per year. There has to an integrated approach for evaluation of options for capability building to get best value for money. The options would be to acquire new capabilities such as advanced aircrafts incorporating advanced technology, tactical missile defence, UAVs, C4ISR - which would come under option of modernization. Cost of these elements of modernisation have to be balanced against reduction of air force squadrons, reduction of army divisions by x number as against modernization options, for more fire power, greater mobility, more attack

helicopters, UAVs, C4ISR for Navy, reduction of number of surface ships as against increase in submarine strength or vice versa. These options are to be examined on the basis of criteria of costs and effectiveness. It should be annualized costs of each option. This could be obtained by amortizing acquisition costs over the expected life of the system, adding operating costs and support costs and discounting future costs.

For effectiveness estimates for capabilities, expert judgements are to be the basis. These could be basis of scorecards for assessing their efficiency against various contingencies. The options are to be arranged in a descending order of cost effectiveness, top options buy more for the money spent. The composite assessment of course depends on relative emphasis given different components of defence strategy. Each of the evaluation would depend on many assumptions, such as planning scenarios to test the capabilities and perceived worth of different hedges against strategic uncertainty. Capability assessment and evaluation should be made against each component of defence strategy. So formulating a well articulated defence strategy is most essential step for deciding about the capabilities that need to be acquired.

Rational allocation of resources - which defence budgeting should aim at - is to be done on the basis of military tasks to be performed based on national military objectives and operational objectives. If the aim is to achieve optimum defence capability within given resources, then planning and programming should precede defence budgeting. In other words, it should be programme based budgeting whose key points are: (i) expenditure plans for a sequence of future years; (ii) expenditures are related to 'outputs' or capabilities to be acquired; (iii) the concept of 'affordability' in medium and long term, both in terms of revenue and capital expenditure are always explicitly considered; (iv) the concept of rolling budgeting is to be introduced as priorities may change because of change in environment.¹⁴

Multi-year expenditure plans and multi-year budgeting on a roll-on basis, are the main aspects of programme based budgeting. Both force planning and cost projection should be done on a multi-year basis if building of optimum defence capability is to be the goal of defence budgeting. 

Notes

- 1 Arthur Smithies, *The Budgetary Process in the United States*, McGraw Hill, 1955, pp20-34, excerpts in *Public Budgeting and Finance*,(ed) Golembiewski and Rabin P.E. Peacock Publishers, 1975.
- 2 Ibid.
- 3 Ibid.
- 4 'Estimates Committee of the Parliament(1992-93)' , para 1.65.
- 5 David Novick, 'Program Budgeting', RAND, 1965, pp. 91.
- 6 Ibid.
- 7 'Standing Committee Report',para 2.1, pp 29.
- 8 'Standing Committee on Defence of Parliament, Demands for Grants 2006-07', para 2.8, pp. 31-32.
- 9 At http://www.budget.gov.au/2006-06/overview/html/overview_13.htm.
- 10 William L. Stanley, 'Assessing the Affordability of Fighter Aircraft Force Modernization', in Paul K. Davis (ed.) *New Challenges of Defense Planning*, RAND 1994, pp. 568.
- 11 Ibid, pp. 583.
- 12 'Standing Committee on Defence , Demands for Grants 2006-07',para 5.4, pp. 60.
- 13 Ibid. Para 5.6.
- 14 Richard J. Hillestad & Paul K. Davis, *Resource Allocation for the New Defense Strategy, The Dyna Rank Decision Support System*, RAND, 1998, pp. 12-15.

The Tribal Dimension of Internal Security In South Asia

*G. D. Bakshi**

The Sub-Continent's Failure to Integrate Tribal Populations

India and China were major agricultural civilizations. It is not generally known that till the 16-17th century they were generating almost 80 percent of the global GDP. As per Alwyn Toffler's discourse the world's first revolution was the agricultural revolution. In the sub-continent it occurred in Mehargarh around 7000 BC.

The Tribal Age. The Copper age man was a nomad – a hunter gatherer who kept moving from place to place as the fruits/berries and game in an area declined. This was the tribal stage of Indian history. With the onset of the Agricultural revolution, fixed human settlements first appeared in the smaller river valleys (where the soil was lighter) e.g. the Chambal, Godavari, Sone rivers etc. These were still semi migrant tribal cultures. Their ecological foot print was very small. As Bronze and later Iron implements were produced, human civilization migrated to the alluvial flood plains of the major river valleys. The soil here was heavier and required domesticated draught animals (like Bulls, Buffaloes and in Europe – horses) to till the soil. Human settlements became much bigger and more permanent in nature. The nascent industries of brick making and pottery were established. Soon big villages evolved into flourishing cities which became the foci of capital accumulation. The cities later evolved into city states and subsequently loose empires.

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The Agricultural and Tribal Civilisation. Soon two parallel civilizations crystallized in the sub continent. The main agricultural civilizations were centered along the major river valleys of the Ganga, Yamuna, Indus and Saraswati. The other civilization was formed by the tribal cultures in the smaller river valleys of the Chambal, Godawari etc. This less progressive civilization was still fixated on the nomadic stage of the hunter gatherer. In the densely forested smaller river valleys, it had created semi-permanent mud and grass roofed hut settlements. In many cases it practiced jhoom (slash and burn) shifting form of primitive cultivation. The empires that arose in the agricultural civilization found it best to marginalize the tribal civilization. The agriculture economy was premised upon generating a surplus through land revenue. The tribal regions were unproductive – as they did not generate an economic surplus and communication/ infrastructural penetration was too costly and not considered worth the effort. *As a result, the three successive empires that unified India – the Mauryan, the Mughal and the British, were content to marginalize the forest/nomadic tribal societies* and left them in splendid isolation (as long as they did not raid the rich agricultural lands for loot and plunder). In the isolation of the forests, the tribal had little notion of scarcity and surplus and hence little motivation for plunder. However, tribal of the North West knew scarcity and hence had a major motivation to launch periodic raids to seek loot and plunder from adjoining agricultural areas. In view of the difficulty of terrain, military campaigns in such under developed regions were highly expensive and not cost effective. The Indian subcontinent therefore simply marginalized its tribal societies and was content to leave them in splendid isolation.

Today, not just India but the entire subcontinent is confronted with the problem of integrating and ingesting its huge and long marginalized tribal societies. *These tribal societies lend themselves to easy militarization as the subset of skills required for hunting and war fighting are very similar.*

The Imperatives of Industrialization. Today India is in the process of transiting from the Agricultural to the Industrial revolution. Its tribal inhabit some of its poorest and least developed regions. Paradoxically, these regions are richest in mineral deposits of Coal, Iron and Aluminum and many other industrial metals. 85 percent of Indian coal reserves are in Chattisgarh, Andhra Pradesh, West Bengal, Orissa and Jharkhand. These are also areas with huge reserves of Iron ore and Bauxite (Aluminum). As such these tribal can no longer be left in splendid isolation. They can no longer be confined to a time warp somewhere in 1000 BC. As infrastructural penetration takes place in these mineral rich tribal areas, the two cultures are bound to clash. The establishment of industrial townships, mining settlements and Special Economic Zones (SEZs) is bound to disrupt the tribal way of life. The exclusion of tribal from the forest by the Forests Act is already an axis of violent confrontation between the two stages of human civilization. Left Wing Extremism needs to be viewed in the prism of a clash between the agricultural and industrial civilization in India.

Mining Skills to IED Skills. The subset of hunting skills lends tribal societies to easy militarization. Their use of ground, field craft and natural marksmanship skills make them ideal guerillas. In the Indian context these areas have been extensively mined. This has led to free availability of explosives like gelatin sticks and dynamite. Out of job LTTE/PLOTE guerillas had imparted the skills of making Improvised Explosive Devices (IEDs) to the tribal insurgents of the Peoples War Group in the 1980s. It is this skill set which has turned the tribal into particularly lethal insurgents. From the year 2001 onwards they have steadily escalated their levels of violence and increased their areas of operation. Left Wing Extremism in India is very largely a manifestation of the clash of the nomadic/tribal civilization with the agricultural cum industrial civilization now shaping in India. In ideological terms, it is also translating into a clash between the urban and rural civilizations. The ideological lead may be provided by

doctrinaire communists (Maoists) from urban India but the primal cause of its military effectiveness is the tribal nature of its cadre base. In terms of civilization – India is today paying the price for its failure to penetrate its tribal regions in terms of roads, infrastructure and effective administrative control. Lack of effective administration led to the ruthless exploitation of the tribal by venal money lenders and avaricious contractor mafias who have treated them in a sub human manner for decades. The tribal have now revolted and Left Wing Extremism has provided them a guiding politico–military ethos and ideology. It is their visa to a meaningful place in the 21st century. The central clash however is primal, the clash between the industrial and tribal civilizations. India cannot afford drastic genocidal solutions nor can it afford the spread of anarchy in its forested tribal tracts which are the epicenters of its mineral resources.

Growth of Left Wing Extremism (LWE). In February 2008 the Indian Prime Minister had felt compelled to highlight LWE as the most significant threat to India's security. Starting from a miniscule agrarian revolt in 1967 (Naxalbari) the movement had snow balled into a serious security concern. What was remarkable was the tenacity and persistence of this ideology of rural rebellion that had defied repeated Government attempts to stamp it out. Despite the government's concerted efforts, the movement had continued to grow and escalate in the degree of violence and extent of spread. The Maoist Communist Centre (MCC) of Kanai Chatterjee and Peoples War Group (PWG) of Kondapally Seetaramiah had merged on 21 Sep 2004 to form the CPI (Maoist). The following table charts the spatial growth of LWE from 2001 – 2008 in the first decade of this century:-

Year	No. of States	No. of Districts Affected
2001	09	53 Districts
2004	13	105 Districts
2008	17	180 Districts

Levels of violence had escalated equally dramatically. On an average 150 security personnel were killed by Naxalites every year since 2004 (when the MCC & PWG merged to form CPI (M)). Left Wing Extremism was centered in the difficult jungle terrain of the tribal areas in the very heartland of India. These contain over 80 percent of Indian tribal population. What needs to be highlighted is that only some 12 percent of the Indian tribal population in the North Eastern states has kept fairly large resources of the Indian Army tied down since 1956. The consequences of a revolt by 80 percent of the Indian tribal population in the Indian heart land therefore merit serious thought and analysis.

Heart Land vs Rim Land Insurgency. A key characteristic of this LWE tribal insurgency is that as opposed to the earlier insurgencies in the North East and terrorist movements in Punjab and J&K, this did not occur in the Indian peripheral border areas but deep in the heartland of the sub continent. As such it was a heartland and not a rim land insurgency. It was focused in a region of very difficult jungle terrain where infrastructural and administrative penetration was minimal. Mining provided a large supply of explosives that made this insurgency highly lethal. Since it was a heartland and not a rim land insurgency, the Indian Army was most reluctant to be drawn into this. As a result, the Indian government has so far tackled this problem with a purely police and CPO (Central Police Organizations) based response. The CRPF has been designated as the main counter insurgency force and the government proposes to raise additional CRPF battalions and a whole host of IRPF battalions. The states had raised their Special Police Forces (on the model of the highly successful Greyhounds model of Andhra Pradesh). These have proved far more effective than the CRPF units but are hampered by problems of interstate coordination. Though CRPF had been designated as the lead CI Force it has major constraints due to its age profile, training and ethos. It is more suited for protective roles than offensive CI operations.

Organisation. The CPI (Maoist) and other splinter LWE groups have a strength of about 10,000 armed cadres. It has some 45,000 over ground cadres. The CPI (Maoist) had formed a Central Military Commission (CMC) under its General Secretary Laxmana Rao alias Ganapathy. Under it were five Regional Bureaus which controlled their Zonal Military Commissions. The fighting cadres are formed by the Peoples Militias. What is of serious concern is the highly effective use of IEDs and the recent tendency to launch large scale attacks on police out posts and armouries in strengths ranging from 1000 to almost 5000 cadres. Such large target sizes have never been encountered before in J&K, Punjab or the North East. This is a dangerous development that calls for an immediate para-militarisation of the Indian response. The other disturbing feature is the local manufacture of weapons and crude but lethal rockets by the LWE. They have established liberated zones with *Janathana Sarkars* (Peoples Government) and *Jan Adalats* (Peoples Courts) in portions of some 60 out of India's 602 districts. So far there is no tangible evidence of foreign support. Should that come about it could lead to a very serious escalation of the situation. The Naxalites are today talking in terms of a Compact Revolutionary Zone or a Red Corridor that stretches from Pashupati in Nepal to Tirupati in South India. Before we examine Left Wing extremism in detail – it would be essential to take a look at tribal rebellions in other parts of the Indian sub continent to place the problem in its larger historical and civilisation perspective.

Pakistan's Tribal Revolt

The Pakistani state had inherited its tribal policy from the erstwhile British rulers. The British had failed dismally to tame the wild tribal areas of Afghanistan, Federally Administered Tribal Areas (FATA), North West Frontier Province (NWFP) and Baluchistan primarily due to the ruggedness of its terrain and the total absence of infrastructure. Economically the British empire in India was premised upon an extraction

of agricultural surplus (in terms of land revenue). Since the tribal areas could not generate any economic surplus, it was economically unviable to try and penetrate these areas in infrastructural terms. That was the basis of the British policy of splendid isolation for these tribal. The Pakistani state was equally content to let them be. Its civilisation demarcation line was the Indus. Its core areas all lay East of the Indus river in Punjab and Karachi. As long as the tribal remained West of the Indus, the Pakistani state was content to let them be. It managed them loosely through the institution of the tribal Maliks and Jagirdars who were periodically bribed and coerced to keep the tribes in control.

Arming the Tribal with Modern Weaponry and Jihad Ideology. The nation state of Pakistan however virtually signed its own death warrant by its extremely opportunistic and short sighted policy of arming the tribes with modern weaponry to the teeth, to pursue its short term goals and foreign policy objectives. It tried to exploit the tribes as non state actors to destabilize the Soviet backed regime in Kabul. With a CIA and Saudi funded heavy injection of over \$ 10 billion worth of small arms and ammunition in its tribal society, it totally destabilized Afghanistan. Unfortunately in the bargain it also totally destabilized the nuclear armed Pakistani state itself and thereby generated great turbulence and instability in the international order. *Not only had it injected modern military technology and small arms in its tribal regions, it has also injected an even more dangerous Jihad ideology that seeks the destruction of the nation state per se and its replacement with a global and transnational Ummah.*

What made the recipe for disaster complete was Gen Zia ul Haq's bid to impose the self same Jihad ideology as the national credo of the state of Pakistan. As long as this anti-nation state ideology was just required to spread destabilization and chaos – it worked very well for Pakistan and the CIA. Saudi Arabia provided its petrodollars to fuel this ideology of destabilization under the mistaken and warped notions of piety. The

denouement came swiftly with 9/11 when the chickens came home to roost. It was the worst case of blow back in the history of covert operations. To colonize Afghanistan and make it its strategic backyard, Pakistan had created the tribal monstrosity of the Taliban and let it loose in that hapless country. When the Al Quaida – Taliban combine now targeted the continental USA itself, Pakistan was coerced to help in the destruction of the Taliban in 2001. Soon Pakistan was force marched to join the Global War on Terror (GWOT). The Taliban foolishly tried to fight a regular war against the Americans. Instead of fighting as a guerilla force, it tried to defend the cities and towns like a regular army. Short shift was made of its conventional pretensions. It was decimated in less than a month by the unrestrained application of air power. The denouement was short and swift and chastising. However, the Taliban learnt its military lessons and went back to guerilla warfare which suited the tribal genius.

Tribal tradition/Folklore. Tribal culture is little understood (except by select anthropologists). The Pashtun tribes have two key traditions.

- Badl. This is the tradition of revenge or the blood feud. Family honour must be avenged by killing any one who harms a clansman. These cycles of vengeance can go on for decades and span generations.
- Mel Mastia. The tradition of Mel Mastia decrees that a fugitive who seeks shelter with a family must be protected at all costs. He must be safe guarded even if the whole family is wiped out in the process.

The Taliban therefore was obliged to shelter the Al Qaeda in terms of the tribal tradition. The tribal of the NWFP and FATA are equally obliged now to shelter the Taliban. They simply had no option in the face of the sheer strength of the tribal lore and custom. This is a facet little understood by the

Western strategists. Pakistan is now hoisted with its own petard. It has to fight the tribal and Jihadi Frankenstein it had let loose upon the globe.

However, plain military logic soon impelled the Pakistan Army to safeguard its core areas demarcated by the line of the Indus. It was economic and cost effective to let the tribes retain their autonomy trans-Indus. The imperatives of the Global War on Terror are now forcing Pakistan to effect infrastructural and comprehensive administrative penetration of this region. That can only follow on the heels of military penetration and comprehensive control established initially through a major counter insurgency grid that enforces population and resources control in FATA, NWFP and Baluchistan. The present force to space ratios put in place are far too weak to affect such control. The economic costs of such penetration are also beyond the means of the Pakistani state.

The Offensive Sweep. So far Pakistan relied on the imperial British tactic of mounting major offensive sweeps for pacifying or punishing the tribes. There were followed by peace treaties that bribed or coerced the tribal Maliks and Jagidars to keep the tribes under check. Such operations are highlighted by the British offensive seeps of 1929 when air power was used freely to punish the tribes. The Pakistani Army made such grand gestures to begin with. Its 11 and 12 Corps and part of its strike reserves (Army Reserve North) were utilized in a bid to overawe the tribal. Air power, attack helicopters and artillery were used as part of these gestures. The houses of locals harboring the militants were bulldozed. Extensive collateral damage was caused. A typical example was in the operations of the Peshawar based 11 Corps (then led by Lt Gen Mahsud Alam). He had ordered Pakistan's 14 Infantry Division to destroy the Spinkai town. This had led to extensive collateral damage and thousands of civilian were displaced by the fighting. Gen Mahsud was one of the Kargil *Ghazis* (he had commanded the infamous 80 Brigade which had been decimated in Kargil) Islamic hard liners in the Pakistan army pointed out to this specific

operation as an example of how little Gen Pervez Musharraf and his loyalists cared for their own people. Alarmed by the resentment these operations were generating, Gen Musharraf now switched to the time tested negotiations with the tribes. Pakistan's Pathan Generals like Lt Gen Aurakzai were responsible for this policy of negotiation and peace treaties which led the Taliban have a free run and reconsolidate its position. Unfortunately for Pakistan, Gen Zia's policy of destabilizing the authority of the traditional Maliks and Jagidars and putting the Mullahs in control had severely disrupted the traditional system of the control of tribal societies put in place by the British. The Mullahs were thoroughly ideological in the Jihad rhetoric and were now in control of the tribal societies. Their ideological sympathies lay entirely with the Taliban – so the repeated peace deals were reduced to a farce which gave a free run to the Taliban. Given the fact that the Taliban was its own creation, the Pakistani army clearly did not have its heart in these operations. It viewed them as a threat to its cohesion. However, the one instance where the Pakistani army displayed great sincerity and earnestness was in tackling the Uzbek and Xinjiang Muslim rebels who were targeting China. Specific operations were launched to hunt them down and win the approval of their Chinese mentors. These operations highlighted what the Pakistani army could do if it was sincere about prosecuting such campaigns.

The Para Military Phase. The NWFP and FATA operations generated a major debate in the Pakistan Army between the Musharraf loyalists (pro American lobby) and Islamic hardliners. The hard liners felt that Americans GWOT was fast becoming a millstone around Pakistan's neck and would thoroughly alienate the army from the people. The water shed was the costly Lal Masjid operation of 10 Jul 2007, where some 105 civilians were killed. This led for the first time to anti army demonstrations. Modernism was clearly losing the ideological battle to the atavistic forces of Jihadism in Pakistan. Securing comprehensive military and administrative control of the NWFP and FATA would require

a force to space ratio of upwards of 300,000 to 500,000 troops deployed in a permanent grid to effect population and resources control. The Indus region was regarded by the Pakistani army strategists as a buffer zone between the Jihadis and the core areas of Pakistan. In fact, out of Pakistan army's total nine corps, seven were deployed in the core region of Pakistan constituted by Punjab and Sindh. Pakistan was seemingly content to let Jihadism play itself out as long as it remained confined to West of the Indus river. It is this largely Pashtun officer led, philosophical approach/advice that led Musharraf (and now the civilian government) to seek peace deals with the tribal.

Eastern Diversion? In the past few months we have also seen a clever Pakistani military strategy to seek an Eastern diversion on the borders with India. The ISI has launched a terrorist offensive in the Indian economic core areas of Bangalore and Gujarat. The Pakistani Army in turn has ratcheted up a series of cease fire violations on the LC in J&K. The apparent strategy is to divert popular attention towards traditional adversary India, and create a situation where it can tell its American interlocutors, that it has no military resources left to prosecute the GWOT against the Taliban on its Western front.

The Frontier Corps. Parallel with this peace process was the paramilitarization of the Counter Insurgency process in Pakistan. The largely tribal based Frontier Corps was given the task of Counter Insurgency operations in the FATA and NWFP so as to shield the largely Punjabi Army from the collective odium of the tribes. Unfortunately for Pakistan this strategy did not work well as the tribal soldiers of the Frontier Corps lack the will and stomach to fight their own tribal brethren. Neither does this modestly equipped force have the military ware withal to overawe the tribal and generate an asymmetry of capabilities. There have been innumerable instances of desertions, and large number of Frontier Corpomen being taken prisoner or made hostages by the tribes.

Pakistan today is therefore hoist with its own petard. It made the cardinal error of militarizing its tribal societies and injecting them with a rabidly anti-nation state Jihadi ideology. Today these tribal are wholly out of Pakistan's control. American prodding of Pakistan to seek comprehensive control of the tribal area could prove to be tragically beyond the Pakistani Army capabilities and innate inclinations. In the face of mounting US, European and ISAF pressure to assert control over its sovereign territory, Pakistan has a Hobson's choice. It may well seek an Eastern digression to get an excuse for not taking on the tribes. Perhaps that explains its recent cease fire violations and escalation of terrorist activities in India (especially the recent events in J&K). An honest commitment to discipline its tribes would require the committal of four to five Pakistani Corps for a one to two decades period. Pakistan is not likely to make this hugely unpopular choice. Its options are severely limited. The tragic policy mistakes it has made in the tribal areas in the past can come to haunt it in the years ahead. Pakistan tribal policies could well sound the tragic death knell/unraveling of that nation state itself. In injecting very large amounts of small arms into its own tribal society Pakistan has undermined the very basis of a modern nation state that rests upon the state's monopolization of violence. It is difficult to see how Pakistan can be saved from the tragic consequences of its own flawed and short sighted policies.

The Nepal Maoist Insurgency

The Maoist insurgency in Nepal is largely tribal in orientation and represents the revolt of the hill tribes against the authority of the Kathmandu valley based rule of the Sanskritised agricultural civilization in the fertile valleys of Nepal. As such the Maoist movement in Nepal has strong parallel with LWE in India. It is noteworthy that as far back as 2001, ten Maoists parties in India, Nepal, Sri Lanka and Bangladesh. Including CPML-PW, MCC, RCCI (Maoist) and CPN (Maoist) got together to form CCOMPOSA to unify and coordinate the activities of the Maoist parties

and organizations in South Asia. The key feature of the tribal insurgency in Nepal has been its huge popularity and its military success in fighting the Nepalese Army to a stand still. Hopefully, with the democratic elections, it has now been mainstreamed and is on its way to forming the legitimate government in Nepal. What impact will that have on the other tribal insurgencies in the subcontinent? Will it encourage them to mainstream, give up violence and join the democratic process? Though highly desirable in theory, we may not see it in practice. Most LWE groups may see the Maoist political success as emanating from their military success in fighting the Nepalese Army to a stand still. The reverse may equally be true and the Nepalese Army could equally claim that it has inflicted adequate military attrition on the Maoists to compel them to accept the cease fire and negotiate an entry into the democratic process. This may partially be true. At 93,000 strong the Nepalese Army was too small in size to decisively defeat the Maoists. At best it could secure urban centers and the political seat of governance in Kathmandu. Its operations were mostly ham-handed pursuit operations. It hardly conducted any night operations. What came to the Nepalese Armies rescue was the Nepali tribal rash temperament. The Nepali psyche is not amenable to guerilla style operations. The strong martial tradition impelled them into a penchant for large scale set piece attacks in huge numbers (1000 to 5000 and more) on Nepal Army posts. These frontal attacks led to very heavy casualties, especially in the middle tier military leadership of the Maoist PLA who personally led these 'Balaclava' charges. It is this attrition that was one of the factors that impelled them to negotiate and give up hopes of an all out military victory. The Indian-induced alliance of the Nepali political parties and the Maoists produced a grass root movement that dethroned the Nepali monarchy and its hopes of a military solution.

The military lessons of the CI campaign in Nepal therefore need to be very closely studied. We see very great similarities in ideological approach and military methodology and tactics. The penchant for large scale attacks is

common to both the Maoists of Nepal and LWE in India. The difference is that unfortunately the police forces and CPOs in India have just not been able to inflict the essential quantum of attrition till now. Apart from the Grey Hounds of Andhra Pradesh, most police forces have displayed an inability to undertake offensive CI operations without incurring heavy casualties. The worrying aspect is the exchange rate in the ongoing operations against the Naxalites. An equally worrisome factor is the increasing militarization, spread and lethality of the LWE groups and the failure of the Indian state in effecting effective infrastructural and administrative penetration of these areas and the provision of good governance which can win over the hearts and minds of the Indian tribal. Infrastructural and administrative penetration however cannot precede military pacification and usually follows in its wake. That calls for the establishment of an effective CI grid to effect population and resources control. Though the CRPF has been designated as the lead CI force, it has major inherent limitations (age structure, ethos, training and motivation) which do not inspire confidence in its ability to inflict the desired degree of attrition on the LWE in the time frame of the next two or three years. The Special Police Forces like the Grey Hounds have been far more successful and this model must be rapidly replicated in other states. That will however still leave the aspect of inter-state coordination of operations by a Unified Command largely unaddressed. The only immediate solution seems to be a para-militarization of the Counter Insurgency model by introduction of the Assam Rifles or Rashtriya Rifles. Either of these forces will have to augment by minimum 30-60 battalions for this additional task. That is why it is so instructive to take a very close look at the Maoist tribal insurgency of Nepal and the Nepalese Army experience in countering it.

The Maoist Structure

The Nepalese Maoists “Army” had 15,000 armed guerillas and 36,000 militia at its peak strength. These have about 14,000 political activities and


some 30,000 over ground supporters. Almost 40 percent of its cadres were females. It had looted a major stock pile of weapons from the Nepalese Army and police. These included 11 x 81 mm Mortars, 05 Rocket launchers, 58 x 7.62 mm LMG, 05 x GPMGs and close to 1000 assorted rifles, including 7.62 and 5.56 mm Rifles. Besides this the Maoists had a weapon holding of 4600 weapons comprising some 2000 Lee Enfield Bolt Action Rifles, pistols, revolvers, 12 bore and muzzle loading rifles. Through ostensibly the Maoists Armed cadres were cantonised in seven camps and disarmed under UN supervision, there is a need to ensure that none of these weapons find their way to Indian LWE cadres on the basis of ideological affinity, or sympathy or via disgruntled Nepalis Maoist cadres. The key feature of the Maoist insurgency was its penchant for launching large scale, set piece attacks on Nepali Army posts which led to heavy casualties. It is this attrition that had a chastising effect and merits close study by the Indian security forces now dealing with the LWE tribal insurgency in India.

The Chakma Insurgents in Bangladesh

Bangladesh has long been engaged in quelling the Chakma tribal insurgency in the densely forested Chittagong Hill Tracts. Bangladeshi Army tactics have been fairly ham-handed and have included demographic inversion of the population ratio in the effected areas. The Buddhist faith of the Chakmas lent it the nature of a “virtual clash of civilizations”. By and large this insurgency has been tamed. However reports of rural tribal insurrections on the Indian pattern have been appearing in Bangladesh and are a cause of expressed concern for the security forces in that country. Such “sympathetic detonation” of left wing tribal insurrections could well take on a more intensified form in that country. It must be remembered that Bangladeshi Maoists outfits had signed on the CCOMPOSA to unify and coordinate the activities of Maoist parties and organizations in South Asia.

Conclusion

The tribal insurrections in India, Pakistan, Nepal and Bangladesh must therefore be seen on as part of a larger sub-continental phenomena arising from the civilisation clash between the newly industrializing societies in these countries with the archaic and hither to marginalized tribal cultures in South Asia. The agricultural civilizations of South Asia found it economically unviable to effect infrastructural and administrative penetration of these forested or arid hilly regions, which had no economic surplus to offer. As such they were content to merely marginalize the tribal societies and fence them off in the splendid isolation of their tribal tracts. A rapidly industrializing subcontinent, whose key mineral resources are located in their forested and hilly tracts, can no longer put off military pacification, disarming and integration of these tribal areas. This entails effective and rapid infrastructural and administrative penetration of these areas to ensure good governance and the integration of the tribal societies into the industrial and electronic civilization by education and capacity building of the tribal populations. Durga Mitra has developed an Indian variant of the Skocpol model to explain the causative factors of Indian insurgencies, including Naxalism. Skocpol argued that the probability of revolution against the state is determined by the degree of penetration of national territory by the state, the importance of socially mobilized groups and the degree of bureaucratization of the state administration and its Armed Forces. Mitra contends that the degree of inaccessibility of an area, strength of separate social identity of its population and amount of external unifying influence on it, determined the propensity of that area for insurgency. A policy of benign neglect and splendid isolation has led to the ruthless exploitation of these innocent tribal by venal and rapacious contractor mafias and moneylenders. This has caused tribal South Asia to revolt. In Pakistan – the injection of massive military hardware in the tribal areas and the spread of an anti-nation state ideology has created the outlines of a monumental tragedy that could well unravel the Pakistani

nation state itself. Short sighted tactical agendas can breed serious long term disasters. The problem is that Pakistan is a nuclear weapons state and its unraveling could have serious repercussions for the region and the globe. It needs to de-weaponise and de-ideologise its society in the interests of its own safety and continued corporate existence. 

Role of Intuition in Military Command

*S. K. Saini**

Introduction

Historically, the use of intuition by commanders to anticipate events in battle to exploit fleeting opportunities has remained obscure. One likely reason is that it has not been a fashionable subject for the great military commanders to talk about, being outside the realm of a logical thought process. Recently researchers have begun to unravel the aura of mystery and give scientific explanations to intuition.

John Adair¹ defines intuition as a power or faculty of immediately apprehending that something is the case, without a reasoning process. There is no deductive or inductive step-by-step reasoning and no conscious analysis of the situation. The object of intuition, also called the sixth sense, is truth in some form or other.² The mind simply discerns the truth about a situation or a person quickly without a long deliberate effort.

The conduct of war will increasingly involve concepts of multi-directional and multi-dimensional, less linear and less dense, and simultaneous operations. Speed will be the essence in the conduct of operations. The mobility of the forces and the fluidity of the battle will further increase the degree of uncertainty, making the job of commanders at all levels more difficult. Commanders will require the vision to anticipate the course of events and the determination to act quickly to influence the outcome. Intuitive skills could provide a commander with rapid insight into

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problems, speeding up his decision making and better equipping him to handle the pace of modern operations.³ Therefore, it is imperative that efforts should continue to understand intuition better in order to provide an institutionalized framework for its use in the conduct of military operations. This paper examines the role of intuition in modern command philosophies and recommends measures to develop intuition in commanders.

Thoughts of Military Thinkers

Clausewitz analyzed that a commander cannot grapple with the chaos on the battlefield unless he depends on his “coup d'oeil”.⁴ He defined it as the quick recognition of a truth that the mind would ordinarily miss or perceive only after long study and reflection. Clausewitz recognized that circumstances vary so enormously in war, and are so indefinable, that the man responsible for evaluating them has to use intuition to perceive the truth at every point. The problem is further accentuated due to uncertainty created by the lack of accurate and timely intelligence.

Jomini and Sun Tzu also identified intuition as one of the paramount qualities of a general. Sun Tzu pointed out that not every good soldier can be equally successful as a commander. This implies that education and experience alone are not enough and that special qualities like intuition and genius are required for effective command. However, Jomini adds one caveat on the role of the military genius in modern war by suggesting that his intuition may have become somewhat less important in the age of mass mobilization.⁵ He cites the example of Napoleon, whose failure to recognize this trend may have ultimately contributed to his downfall. This anomaly probably resulted from Jomini's faulty characterization of command in the chess player mode.

It is evident that intuition was recognized as a necessary quality for a

commander throughout history. However, it remained inexplicable and the great military thinkers inadvertently linked it with a “military genius” who was a creative, imaginative and experienced leader. The intuition of the “military genius” was not irrational behavior but reflected a different mode of rationality in which his intuitive decisions could be explained *ex post facto*.⁶ It was accepted that commanders are rarely in control over events on the battlefield and the successful commander is not the one who carefully implements his original plan, but rather the one who intuitively “reads” the chaos on the battlefield to take advantage of passing opportunities. However, modern commanders having trained staff and information gathering/processing technology at their disposal appear to be better placed to command their force effectively. This could result in unrealistic expectations and an illusion that a commander is fully informed of what is going on.

Historical Case Study of Use of Intuition

To place intuition in proper perspective, it is worthwhile to examine a contemporary battle where intuition was successfully exercised. While many Indian military leaders have given detailed first hand accounts of conduct of operations during the 1971 Indo – Pakistan war, none of them has included an instance where a decision was arrived at based on just a hunch, rather than a detailed appreciation of the obtaining situation. On the other hand, Lt. Gen. (Retd.) FS Lodi, Pakistan Army cited a vivid and relevant example of successful use of intuition in the 1971 war against India during his lecture at the Command and Staff College at Quetta.⁷ During the war he was commanding an infantry brigade on the Lahore front and had captured about 20 square miles of Indian Territory, including many villages. The Indian Army put in a night attack by 14 RAJPUT supported by a squadron of tanks and recaptured a village, China Bedi Chand, defended by a company of the Baloch Regiment. The situation was not too clear. The Baloch Co. reported that his whole company had been

wiped out, which was confirmed by another forward company commander who reported “the enemy pouring in across his left flank.” Despite corroborated reports of an adverse situation, the Brigade Commander did not believe them but was somehow certain that only the village had been lost. He felt that the situation was adequately stable to launch a counter attack. He studied the map for a few minutes doing a quick mental appreciation in the process and decided to counter attack as the occupation of the village by the Indian troops would outflank his forward defences, which could later be unhinged. He had already moved his reserves consisting of two rifle companies and a squadron of old Sherman tanks less two troops, in the general direction of the village the day before. The village was retaken by a quick counter attack, and 34 Indian POWs were captured. He found to his surprise that the Baloch Co. had pulled back with few casualties and no enemy troops were pouring in as reported.

Conclusions of Scientific Research

Psychologists and scientists have been studying decision making for quite sometime and have put forth a number of theories to explain intuition. Gary A Klein, a psychologist sponsored by the US Army Research Institute, concluded after extensive survey that decisions are made either analytically or they are recognition based.⁸ In the first case, persons arrived at a decision after a deliberate process of weighing the pros and cons of the alternatives available. This is analogous to the military appreciation process used by us. In the latter category, persons did not deliberate over the options when under pressure. It appeared that they were not attempting to find the best possible solution but arrived at a “workable”, “timely” and “cost effective” solution quickly. These decisions appeared to come from a “feeling” which apparently is intuition.

Scientists have identified that intuitive people share one characteristic - they are experts in a particular field of knowledge. Hence, intuition or

battlefield vision becomes possible due to war fighting expertise or mastering war fighting knowledge. Research in cognitive psychology has established that experts possess a broad but detailed knowledge base that is organized into rapidly accessible categories which accounts for intuitive thought.⁹ The process of accessing this information is not a conscious one. Psychologists believe that four characteristics linked with organization of expert knowledge are essential for intuitive thought:¹⁰

- Experts are able to quickly impose meaning on a complex pattern of information. This reflects efficient use of a detailed knowledge base and not a superior perceptual ability.
- Experts exhibit extraordinary speed in performing mental tasks and solve problems quickly by recognizing a specific pattern of events. This triggers a sequence of problem solving responses by matching the current situation with a similar historical or experiential event in the memory.
- Experts rapidly interpret and give meaning to information based on general principles stored in their memory.
- Experts have superior attention and memory capacities due to organized structure of knowledge.

Therefore, research on intuition has given meaning to the ethereal thoughts of the great military thinkers. “Military genius” and “coup d'oeil” of Clausewitz are synonymous with expert war fighters and battlefield vision. JFC Fuller's remark that a well stored memory is a great asset for a general and should be like a fully stored library is in line with the rapid accessibility of the expert knowledge base.¹¹ From expert knowledge comes the mental capability referred to as intuition and it can be developed through expertise.

Nature of Modern Command Philosophies

Command is a function that has to be exercised continuously, if the army is to exist and operate. Broadly, command can be exercised in two ways. First is to plan everything in detail, maintaining a tight control during execution and centralization of the decision making process. Second is to fix the decision thresholds as far down the hierarchy as possible with freedom of action granted to the subordinates within the overall concept of operations. Historically, those armies which did not turn their troops into automatons or attempt to control everything from the top have been more successful.¹² German and Israeli Armies have tended to follow the second method whereas the Anglo-American approach has been more biased towards the first method of command. However, presently most of the armies of the world are moving towards directive control and mission oriented orders to cope with the fluidity of the modern warfare. Mission oriented command system is the essence of the doctrines of maneuver warfare and integrated battle.¹³

A command philosophy provides the basis for exercise of command. The main elements of the modern command philosophies are:-

- The importance of making a timely decision. The major factors in decision making are the amount of accurate information and time available.
- Understanding the intention of the commander, both generally and specifically.
- Unambiguous responsibility to fulfill that intention based on initiative to act within any freedom of action given or purposefully in the absence of further orders.

Pressures on the Commander

A commander striving to complete his mission within the parameters of the modern command philosophies is under tremendous stress and strain due to the combined effect of a number of factors, which are discussed below.

Commanders in war strive for certainty about the state and intentions of the enemy's forces, environment in which war is fought - weather, terrain, radioactivity and the location of own forces.¹⁴ To achieve optimum results, a commander needs to be as certain as possible about these factors. In spite of automated and electronic battlefields in which everything that exists can be seen and everything that can be seen can be hit, certainty remains elusive. At the start of the air campaign against Iraq in the First Gulf War, General Schwarzkopf commented, "sitting in the headquarters there was no way for us to tell at first what was going on. As each scrap of information came in, I scrawled it down on a yellow pad".¹⁵ The reasons for uncertainty on the battlefield are:-

- Clausewitz's observation that a great part of information obtained in war is contradictory, a still greater part is false and by far the greatest part is uncertain remains true even today.
- War brings to the fore some of the most powerful emotions like fear, anger, vindictiveness and hatred. The human mind can distort information at any stage of the intelligence cycle. A demand for more information prior to action may well represent an escape from the stress of real decision making and avoiding any calculated risks.
- War consists of two independent wills confronting each other, with each side free to operate and willing to double-cross the other; certainty is impossible.

- The human element still remains more important than the technical element in any situation and hence the unpredictable nature of the decisions of the commanders. Communications and information processing technology are merely components of a command system of which the commander is most important. If we cannot guarantee certainty with technology then the alternative is to organize our command system in such a way that we reduce the damaging effects of uncertainty.

Present day commanders at all levels will be running against time to gather information, evolve a plan and bring to bear the combat power of their force at the point of decision due to wide dispersion and high mobility of the combined arms force. Ability to exploit fleeting opportunities by subordinate commanders using their initiative is the central theme of the mission oriented command. Due to technological advances commanders will be flooded with information from a plethora of sources. Within the constraints of time they will have to judge the reliability of the available information, discard redundant information and arrive at a decision.

Utility of Intuition in Command

Intuition can help us to reduce the subjectivity dilemma. Sun Tzu and Clausewitz identified war as an art and not a science. Each military problem has a graduated spectrum of potentially workable solutions and not just a single optimal solution. These solutions are the product of a commander's imagination and creativity after considering various factors. An intuitive commander who can anticipate the flow of the battle will be able to function on a higher plane, seeing hidden opportunities and solutions.

Intuition can also aid the appreciation process. At first glance one may be tempted to dismiss the role of intuition in the appreciation process as

contradictory. After consideration of various factors in the appreciation process, a number of options emerge. The commander is then expected to make his decision, taking into account the pros and cons of each alternative. Advantages and disadvantages of a military plan are not objective and therefore, cannot be accurately quantified into a mathematical matrix. An attempt at this is fraught with the danger of distorting the deductions of the factors. Ultimately while making the decision, a commander is faced with subjectivity and abstractness just as the analysis of the relative strengths of the opposing forces will not predict the outcome of an engagement. A commander who can see the unfolding of a battle plan using intuition will be in a better position to select a course of action appropriate to the circumstances and achieve surprise.

Intuition also has an important role to play in dealing with information overload. The unconscious part of the mind from which intuition derives is infinite in size and has the ability to process information in parallel with the conscious. The advantage for the intuitive and imaginative commander will be that his mind will continue to process information even when his conscious is occupied with other matters.¹⁶ Despite the technological advancements in reconnaissance and surveillance devices, the intelligence picture will never be complete and accurate. Battlefield will always remain unpredictable, chaotic and non-linear; firmly placing war in the realm of art rather than science. The dynamic nature of war may simply deny the time needed to process a large volume of raw information available to the commanders these days. Commanders will perforce have to make decisions based on incomplete intelligence. There would appear to be no way of doing it except what Napoleon called - “a superior understanding” – one based on, to be sure, on training and practice, but ultimately relying on intuitive judgment than on rational calculation. Moreover, overloading the decision makers with information makes identification of underlying patterns in complicated situations difficult. It has rightly been said that “to be a successful decision maker we have to edit”.¹⁷

Intuition could also help to reduce the decision making time. The friction of battle and free will of the enemy will inevitably result in unexpected and unfamiliar battlefield conditions. While dealing with such situations intuitive commanders can use their organized knowledge base to identify constraints in the situation and quickly rule out options. Thus by reducing the number of alternatives, a commander can reduce the decision making time and arrive at a workable plan. An expert commander can quickly organize the analysis of terrain, weather, threat perception, enemy activity and disposition of forces into meaningful patterns. Thereafter, by matching these patterns with information already stored in memory through experience and historical study, decisions can be made quickly. Comparing the analytical and intuitive decision making processes, neither is good or bad.¹⁸ The key is to have a balance between the two and use them in appropriate circumstances. Deliberate and analytical thinking is apt when there is adequate time for a clearly defined task, and such an analysis can facilitate rapid cognition. In contrast, during combat situations the tendency to create data and information is best avoided.

Matching talent to tasks is an important function of command. A commander must study the personalities and characteristics of his subordinates and staff. Some will excel in a mobile, fluid battle, others are better in a set piece attack or a dogged defense. Field Marshal Montgomery estimated that he spent a third of his working hours in the consideration of personalities. A good judge of character has a gut feeling about people. His judgments may be based on unconscious perception which has the ability to interpret the emotional significance of such things as facial expression and behavior. With joint operations likely to be the norm, a commander may not know all his subordinates in detail. Intuitive people learn a great deal about someone in the early hours of their relationship, later on they may go on discovering more and more, but they are rarely in for major surprises.¹⁹

Conditions for Successful Use of Intuition

Intuition cannot function in a vacuum as solutions to military problems are not grasped from the ether. A commander must have a clear vision or purpose, a grasp of the situation and an understanding of the capabilities of the enemy and own forces. In other words, commanders need to be experts in the art of war fighting to be able to use intuition successfully. Intuition that is born out of a longer period of thought, study and experience, is more likely to be true. The relationship between a commander and his subordinates will affect intuition. The scope of initiative at different levels of command will govern the extent to which imagination and intuition can be used. If a superior commander kills initiative, then he will paralyze his subordinates' intuitive abilities. Also an intuitive commander needs to be supported by competent staff that can quickly carry out necessary staff checks to ascertain the viability of his plan and implement it. Staff officers must have the courage of conviction to present facts to the commander without bias. Montgomery's imaginative Arnhem operation was flawed because the formal appreciations had overlooked some of the vital factors.²⁰

Limitations of Intuition

Intuition is an aid available to a commander for decision making and risk assessment. But it has its own limitations which the commanders need to be aware of. The most discouraging disadvantage is that intuition is indefensible when proved wrong. Emotion and intuition have their sources close together in the hinterland of the brain. Hence strong emotions can affect intuition to a great extent. Fear, anxiety and pressure to make a rapid decision are the biggest enemies of positive intuition. Stresses and tiredness of mind or body can play havoc with the intuitive thinker's immediate comprehension of the situation. Without adequate information, an intuitive commander could let his imagination run wild


and arrive at decisions which may reflect his own wishful fantasies. It is important that intuitive decisions be subjected to a quick verification process by the staff as with decisions arrived at by a deliberate analysis of factors.

Developing Intuition

The first step is to accept intuition as a valid tool available to commanders to reduce response time for the decision cycle. This will change the current attitude amongst the officers of regarding intuition as an irrational, spatial element. The next is to learn to trust the intuitive powers. Commanders should be encouraged to be creative, to use their imagination and follow their intuition. Unfortunately, technological advances have created an impression of absolute transparency of the battlefield and playing down the human and uncertainty factors. It is important to reiterate that no war can be won by technology alone.

Leadership development in the armed forces is based on providing institutional training, operational and combat experience through appropriate assignments, and self development by individuals. Personal operational experience is the most effective way of developing expertise in the art of war fighting and putting to test the competence of the commanders. The reason being that retention of knowledge gained through experience is better and long lasting. In the present geo-strategic environment, we can only provide combat experience to our leaders in low intensity conflict situations and not for high intensity conventional wars. Therefore, the next best thing is training. Lt. Gen. (Retd.) Paul Van Riper, US Marine Corps, says that “how good peoples' decisions are under fast moving, high stress conditions of rapid cognition is a function of training, rules and rehearsal”.²¹ The aim of training to develop intuition should be to expose commanders to a varied spectrum of situations. Due to various constraints, large scale field training exercises are likely to be curtailed

further. Therefore, dependence on simulated training and war games is likely to increase. Facilities need to be created where all commanders, irrespective of their level of command, are practiced and tested under conditions of stress and strain. Exposing commanders to a variety of computer decision games will provide the necessary alternative experience to develop intuitive powers. These games should not be confined to the activities of a particular branch or service as per the background of the officer but cover the whole spectrum of war fighting. John Adair observes that for progress in occupational areas where leadership is necessary, the specialist must give way to a generalist.²²

Intuition is also closely related to imagination and creativity which is lately being referred to as strategic intuition.²³ Put simply, it can be described as a good idea which comes as a flash of insight, when one least expects it. Strategic intuition is different in the sense that a brilliant idea occurs not under pressure but in a new situation, which is when you need your best ideas. Flashes of insight lie at the heart of great achievements of all kinds throughout history. The study of creative thinking confirms that unusual originality is a sudden realization in the subconscious mind or an instinctive judgment. Dixon argues that very few intellectuals join the armed forces. Most of the officers are of average intellect.²⁴ The structured way of thinking in the army further undermines creativity and imagination. Most of our literature on creative thinking is borrowed from the corporate sector. There is an urgent need to commission studies to adapt these techniques to our requirements for developing creativity and imagination in military commanders. 

Notes

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- 2 John Adair, *Management Decision Making*, Gower Publishing Company. 1985, pp. 92.
- 3 British Army Field Manual, 'Command', First Draft, pp. 1-9.
- 4 Michael I Handel, *Masters of War*, Frank Cass & Company, 1992, pp. 145.
- 5 *Ibid*, p. 150.
- 6 *Ibid*, p. 149.

- 7 Lt. Gen. (Retd.) Sardar F. S Lodi., 'Reflections on Army Culture', Defence Journal. Abridged version of lecture, November 26, 1998, at <http://www.defencejournal.com/jan99/reflection.htm>.
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- 9 Beryl L Benderly, Everyday Intuition, Psychology Today, September 1989, pp. 36.
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Armed Forces: A Career Choice?

*H. Dharmarajan**

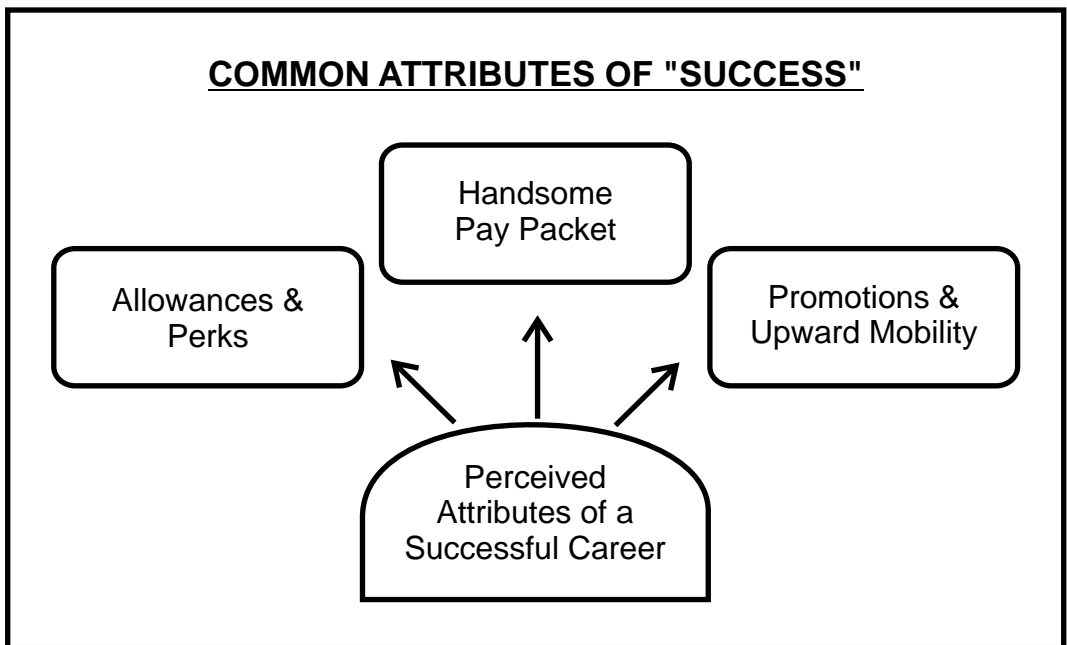
The youth of today are a well-informed gentry. Mentally mobile, analytically aware, surgically sharp and clinically precise - the Indian teenager is rarely ingenuous or naive. He is inquisitively thorough, exhaustive in examination of his options and intensive in the depth of his research. With myriad technological tools at his back and call, he need look no further than the nearest cyber café, his very own modem-enabled palm top or better still his personal 3G I-phone. Gleaning all that he desires to know, he will stop at no firewall, to delve into the nitty-gritty of the meat of the matter.

Images of the world flash past his mental screen, like a fast-paced trailer of a music-video. His vast horizon encompasses the entire ocean of opportunities, dreaming in his own Utopia of opulence, filled with all the luxuriant splendour at his imaginative best. Be it the palaces of the Arabian Sultans, the luxury yachts sailing in the Mediterranean, the prohibitively-priced BMWs, or the underwater weddings - to mid-air mega-events. Everything seems achievable, as easily as it is to see them in virtual space.

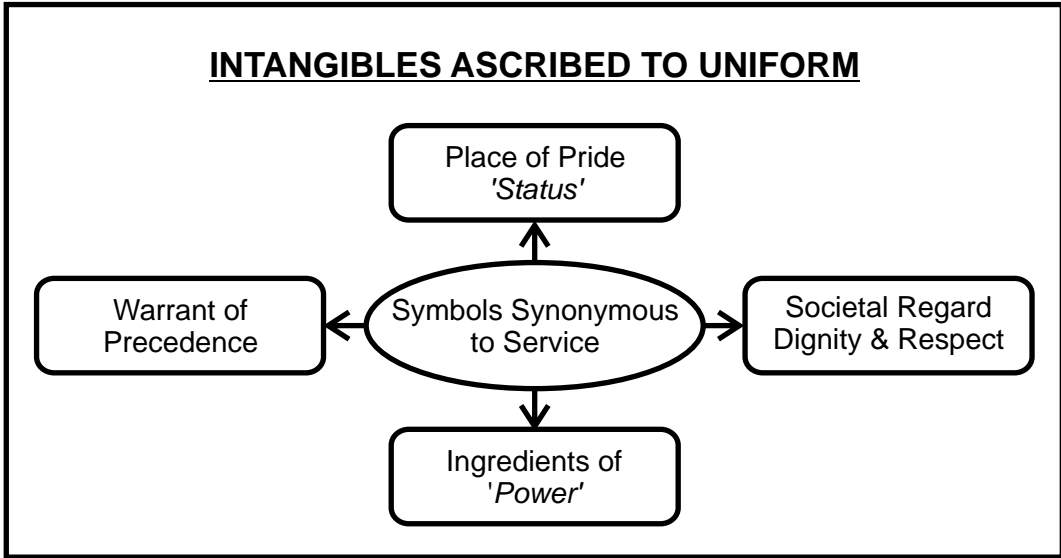
Yet, an adolescent's mind in high school is a constantly vacillating bundle of contradictions. It is swayed by perceptions formed over day-to-day experiences, stories of hearsay, myths of “*success*”, examples of “*rags-to-riches*” and many other such biographical narratives. Bombarded increasingly by the electronic media - both through TV as well as the Net,

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opinions are initially formulated at a very nascent stage. These early views then get bedded-in with the passage of time, till it comes to the career-crossroads. The way forward gets chosen based on his underlying aspirations, his conceived value system and eventually his individual capability. It can be expected of any teenaged lad to aspire for 'success'-but what constitutes 'success' is important to be constructed in the correct perspective. Parents, teachers and the company he keeps play a vital role in instilling the correct values as a strong foundation in a child. Beliefs, ethics, morals and principles inculcated, besides the importance accorded by the visible society to these values, norms-traditions-culture - all add up to the ultimate outlook of every high school pass-out.



While material comforts do occupy a very high place on the agenda of a young man, often there are various other intangibles, which spark a surge of commitment and fire up the passion in an individual to perform. Particularly, for the charm that '*uniform*' exudes, there are different facets ascribed to it that add on that sense of self-esteem in an individual.

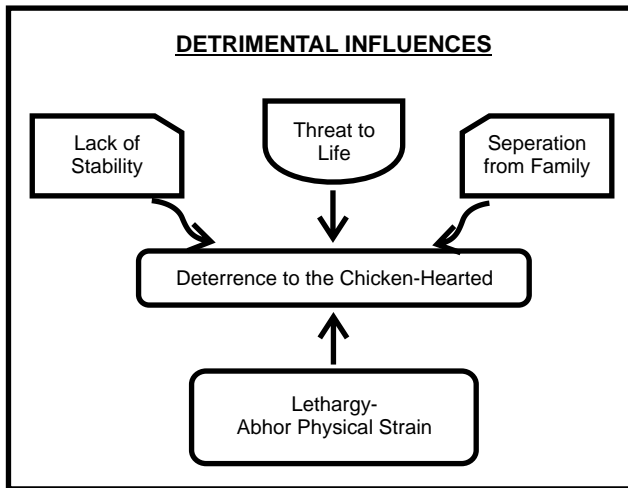


Are these accreditations of the Forces still in place today?

Different societies accord varying degrees of importance to the uniformed class. Often, this is judged by the simple privileges and immunities enjoyed by this warrior clan vis-à-vis the common man. In a war-torn country or a state brutalised by martial law, '*power*' does appear to flow from the barrel of a gun. Where battle wounds are fresh, there is overwhelming concern for things *military*. Nations that have conscription in vogue, have all walks of life and all arms of the Government being dealt with by people who have been in uniform. Not surprisingly, countries such as Israel accord prime status to their defence forces, the IDF, in their society.

On the other hand, the streaks of lethargy that pervade the society at large prevent the couch-potatoes and the chicken-hearted from even contemplating on options such as the Armed Forces. The electronic media today beams graphic and gory images of bloodshed on the borders into our bedrooms... not just reminding the public of the need to respect the one risking his life, but also amplifying the rigours and dangers of the

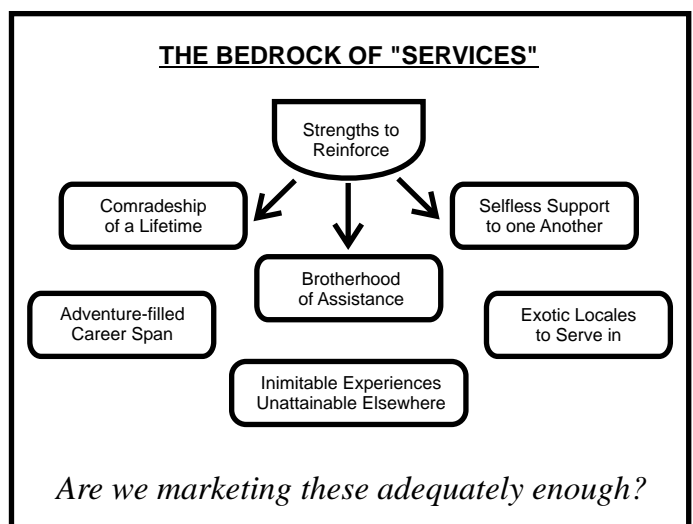
profession. Various adverse aspects of the Services, highlighted repeatedly to garner additional sops from the Government - such as the recent pay commission - also reinforce such convictions and deter sections of the youth.



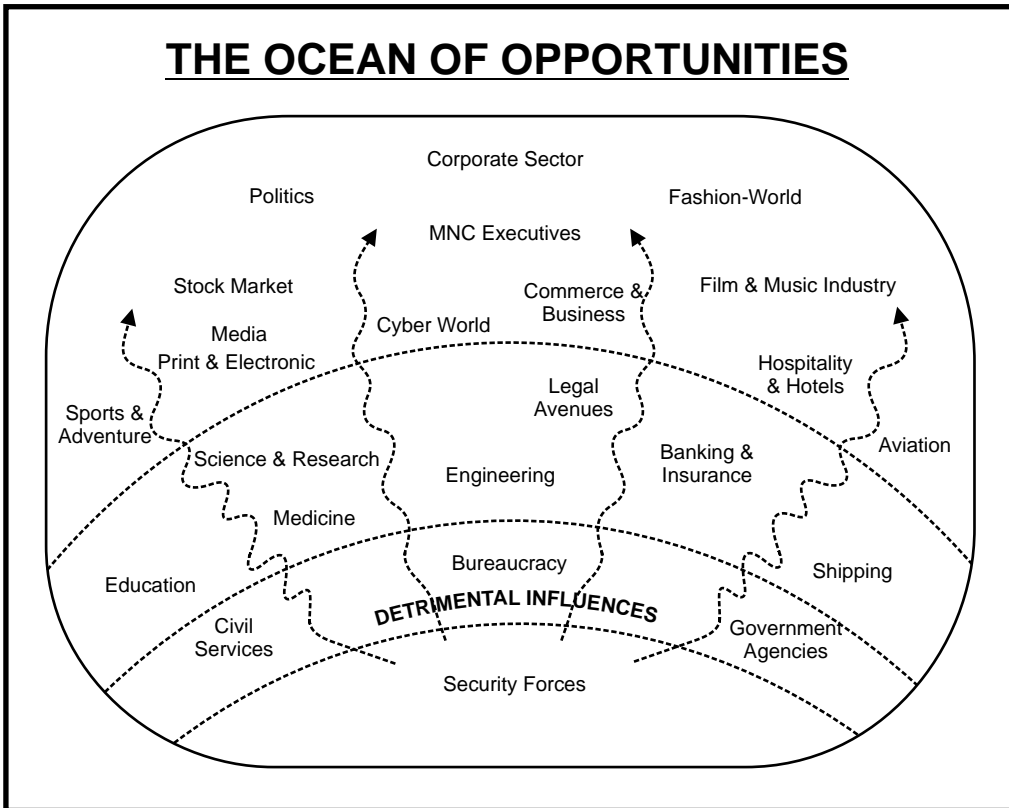
Can these detrimental influences be themselves turned into strengths, in some way? The "threat" is itself a form of a thrill, akin to that experienced while undertaking adventure. The 'exotic' tenures that a soldier occupies are simply beyond replication anywhere else. Besides, the bedrock of the services is in

its fierce spirit of camaraderie. It is essential to emphasise upon that selfless and extraordinary brotherhood, something very different from the civilian mainstream.

While there are these impairing factors that deter some considering the option to the olive-greens, there is also a concurrent phenomenon that weans away the young brigade with its ocean - full of opportunities. For the vast multitudes of

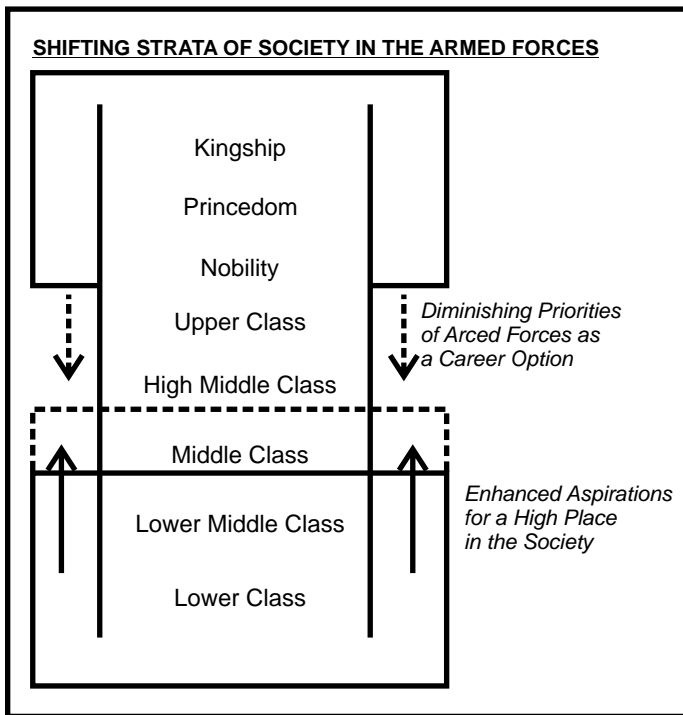


fence-sitters, the temptations of enriching soft placements, or the challenges of unexplored vocations, form obvious first-choices in their perceived *easy* road to 'stardom'.



The pride in the warrior clan of the medieval yester-years has slowly regressed in the modern era, leaving it no more amongst the so-called elitist options.

There is a deluge of tremendous human resource potential emerging from the renowned educational institutions across the length and breadth of the country – fresh with bubbling energy and enthusiasm. But the *crème de la crème* of talent is drawn inexorably towards the '*greener pastures*'. The aura that earlier drew the nobility and the princedom to soldiering has veritably vanished, leaving the worthy profession of arms as *just-another-career* for the not-so-high classes of society.



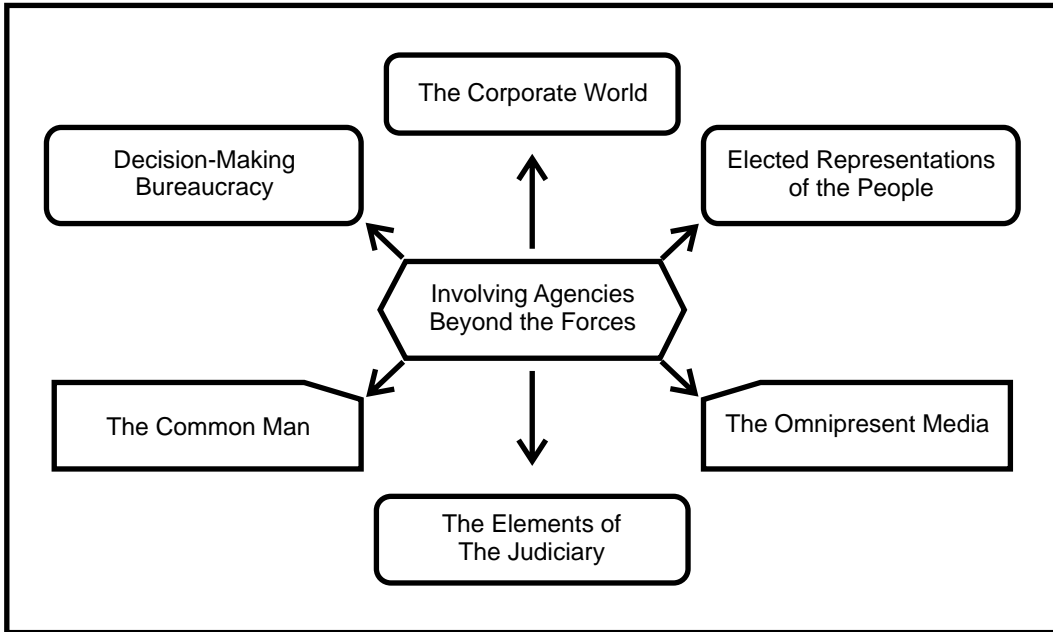
What course correction is the need of the hour to get back the status quo ante of the forces? The old position of pride, that erstwhile warrant of precedence, the honour, respect and dignity?

The first thought that comes to mind is to plug the dribble of talent leaching out from the Services. But, to make the career option

sustainable, is the policy of merely shutting exit-doors a step in the right direction? Are we actually struggling to fight a defensive battle of holding on only to the mediocrity within? Further, are we deterring better talent from coming into a *one-way street*?

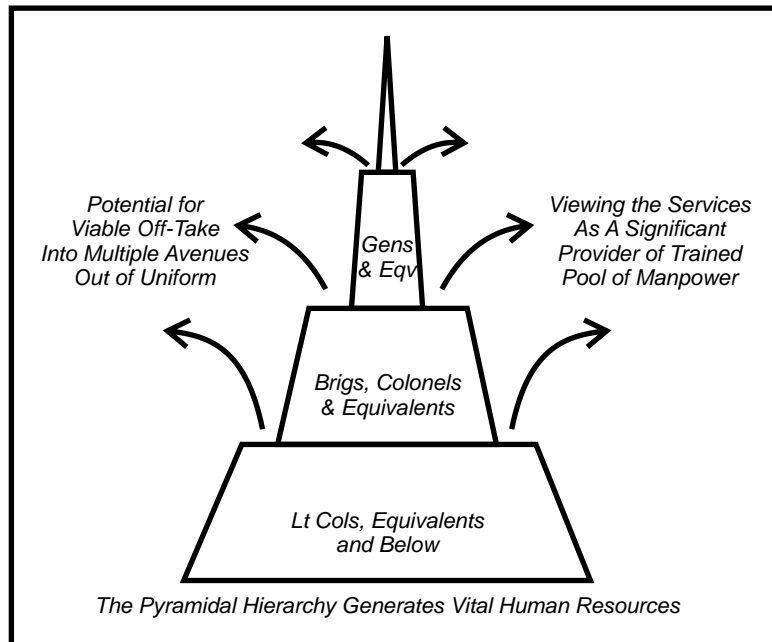
What deliberate shifts can we envisage to make a successful and satisfying option of choosing to serve for the Nation? Can the tide be turned by making *soldiering* an actual attractive choice - not just a bottom-rung pick? The need of the hour is a positive and proactive approach, not a back-to-the-wall fight for survival.

There *are* innumerable measures which can be addressed towards making a better career-choice within the Armed Forces. Some may not figure in the ambit of possibility within the Forces themselves, since various other agencies like the bureaucracy and the decision-making politicians have to be brought on board.



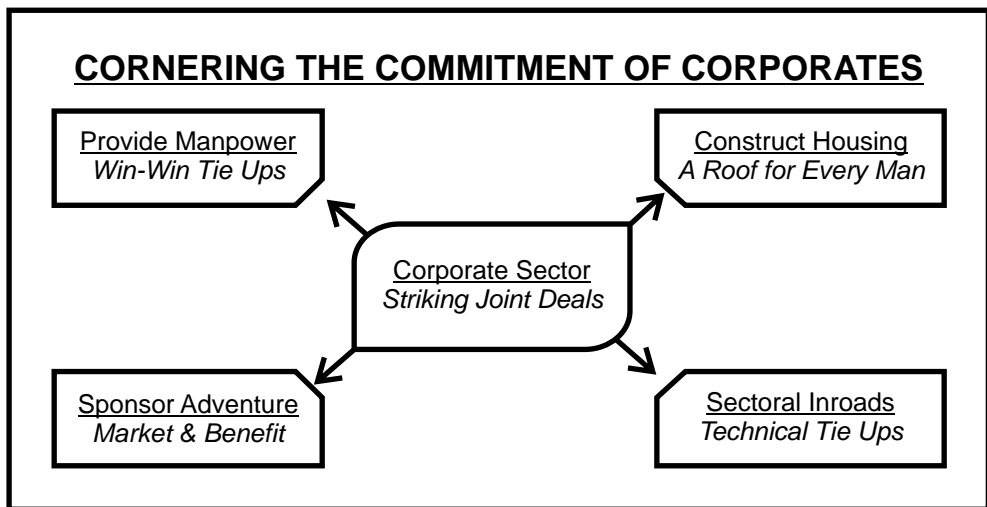
Often, there is an agonising sense of despair since there is a steel wall of intransigence towards the demands of the forces, from most entities. In all cases, the first step would be to generate a strong sense of empathy within *all* these agencies towards the soldier. Unless the authority in every chair

understands the sacrifices that 'Service' involves, one can expect little benevolence. The predicament at hand is then to generate such an awareness-wave *w i t h o u t* resistance. Merely stating that 'India does



not value its soldiers who keep the Nation's borders inviolate' will move no mountains. If there is a need to stem the demotion of the forces in the social hierarchy and reverse the steep decline in honour being faced, concrete steps forward have to be taken in multifarious directions.

At the outset is the brain-drain. This 'leakage' of talent can be categorised in two parts - one that is ejected by the pyramidal system and the other which willfully exits for better standards of living in other sectors. Both are existential – and do not need to be seen in isolation. Ordinarily, 'leakage' is seen only as the good talent *selected* organizationally to be retained, which still seeks to 'quit' at the individual level. Debarring one who is seeking to doff his uniform can do little for motivation. It is essential to address the factors leading to it rather than merely preventing it by legislation. For long term health of the system, it would be essential to market this vital pool of human resource to the glut of agencies who seek them vigorously.



Today, corporate houses seek particular Army-course qualified personnel, reaching out to the best in every stream. There are great marketing stakes involved, which can be addressed only with clean & genuine joint ventures. Many other fields of common interest can be identified for mutual gains.

The ever expanding economy of India continues to sap the best of our service manpower into diverse streams of expertise. This irreversible trend, no doubt, is here to remain and grow. Can the Armed Forces join this bandwagon, instead of trying to counter it? The Services need to formalise win-win tie ups with every type of organization that headhunts into the system. This would result in streamlining the flow. More importantly, taking a long-term view, this would get better motivated manpower into the forces itself, at the intake level.

Often, many a foreign-returned Indian officer learns that his counterparts across borders are each promised a house at a location of their choice as soon as they don their uniforms. It needs no financial genius to recognise that the young officer emerging from commissioning academies could, strike a sensible and reasonable long-term deal¹ with sincere and earnest building magnates for common housing colonies, may be as course-mate groups in multiple choice locations. There again is a win-win corporate² tie-up which can be enacted with a flavor of selfless *service* to the noble profession. Needless to mention, such a corporate tie-up, enabling *a roof for every officer* can itself rake in a much better intake potential, at the pre-commissioning stage.

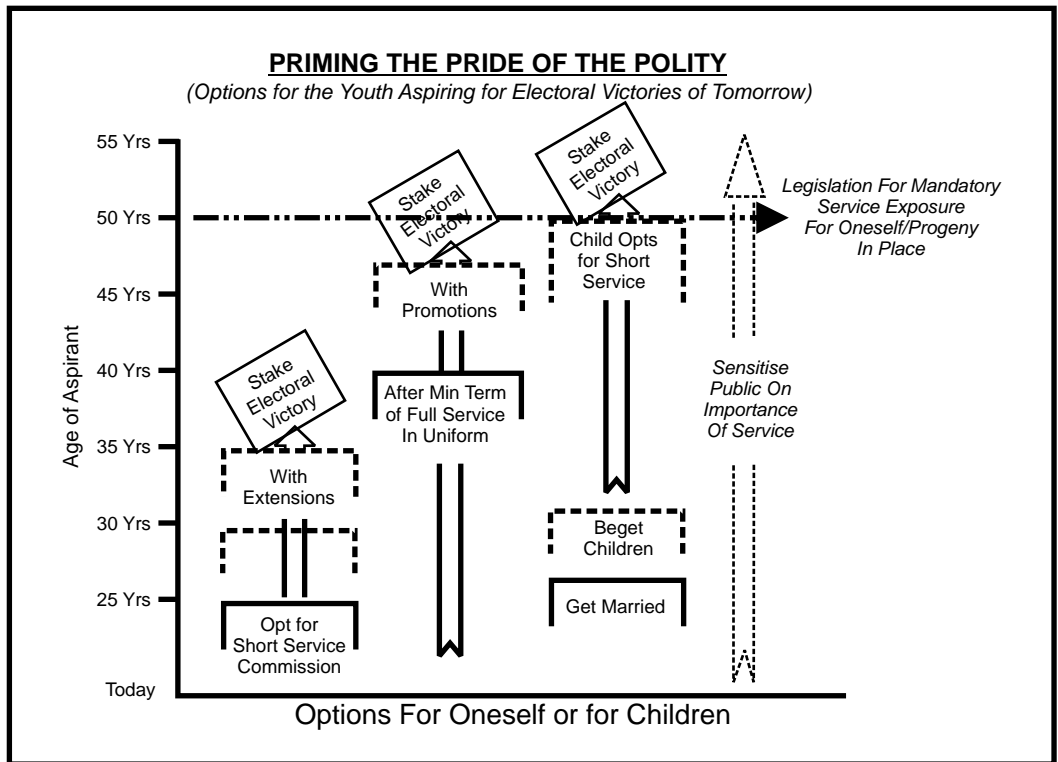
There has always been the need felt to get the elected executive decision-makers to stand by the genuine sentiments of the soldiers. However, headway has not always been made in this regard since some in the places of power have not seen what it takes to take up the noble cause of soldiering. There is hence apathy sometimes at different decision making levels. Hammering away at an insouciant leadership may not get the requisite attention. There are two aspects that need address in a deliberate and long-term manner.

First is the example from the ongoing American election debates. If a Vice-Presidential nominee like Sarah Palin can get an immense fillip by having

her son in the US Army in Iraq doing *National Service*, can a similar denominator for patriotism and *service* be applied here to *our* nominees seeking election to various legislative bodies. If Prince William can take pride in doing frontline duty with the British troops in Afghanistan, our leaders should claim such proud recognition likewise. The Indian public at large need to value and recognise the selflessness index of such service, by oneself and/or by the nearest of blood-related kin.

Considering a gestation period of 25-30 years, when the youth of today would be aspiring to lead the polls, mooted legislation *now* for all born after say 1988, to have personally, or through their own progeny, experienced any form of uniformed service by 2038, may see the light of day. This could apply to both males and females, with equity.

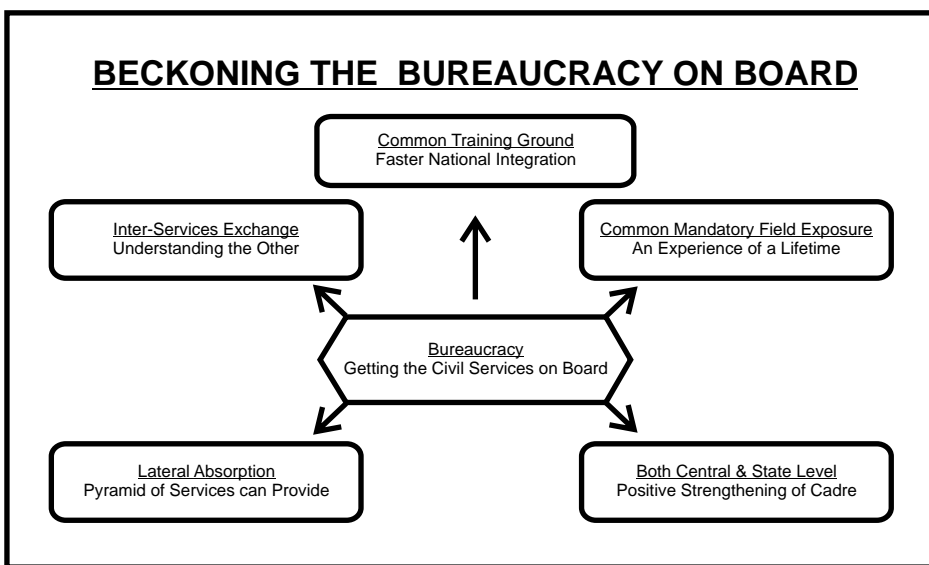
The exercise of mooted legislation itself is likely to sensitise the public



and generate much of the desired empathy. While this empathy alone may not necessarily address the opening up of the financial 'purse strings' to the defence forces owing to the growth pangs of our developing economy, it may yet provide the requisite impetus to get the warrant-of-precedence back in place.

Second is the aspect of getting the serviceman's vote to count. His importance in a democratic society is only as much as his vote counts. With the archaic postal ballot, there is little cognizance taken of his worth. What is required is an ATM type of facility for any serviceman, posted anywhere in the country, to be able to walk into an ATM-like polling booth and vote with his electronic voter-identification card. With a strong and active ex-servicemen lobby sensitizing the voters, the empathy index for the service fraternity can only rise.

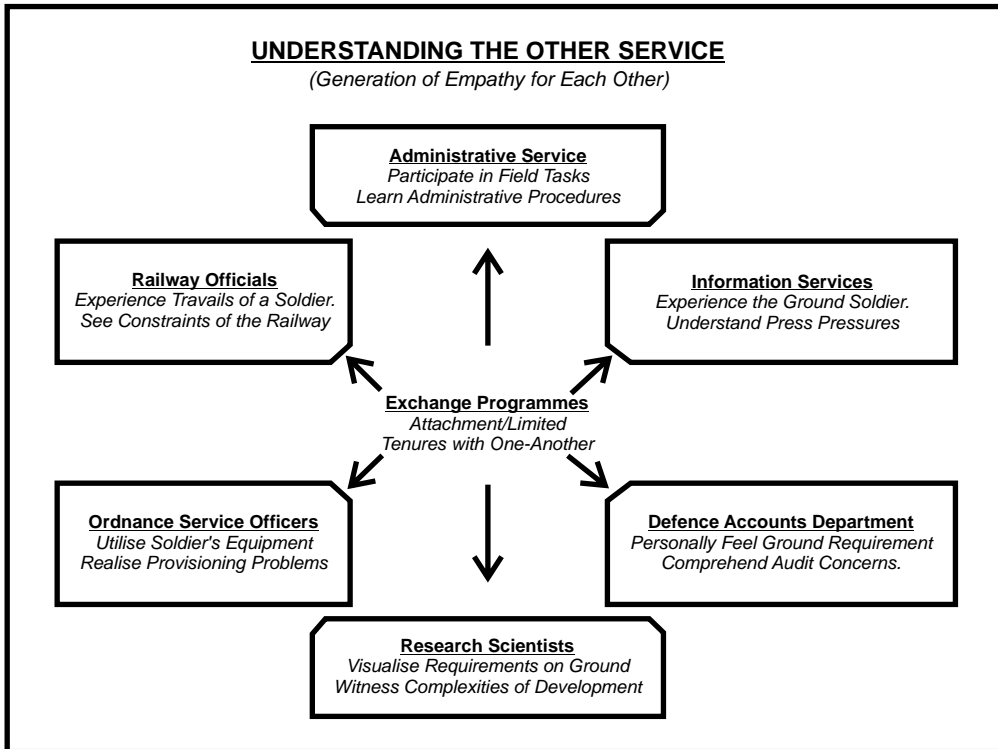
The Bureaucracy, though disinclined to merge identities at any level with the Services, could be approached with mutually beneficial proposals. Certain similar problems plague the civil services. Yet, there are complementarities too.



It is common knowledge that the civil services have been on the look-out to tap high school-pass outs to meet the gap in its quality intake. An elite institution like the NDA is ideally poised to instill the values of discipline, comradeship and a common platform to integrate not just the Armed Forces, but the civil services as well. If there are joint curriculums like the National Defence College in which there is a common training ground, the same could similarly be transposed to a graduate stage, which is otherwise presently diverse for the civil services.

Both, the Central as well as the State level civil services cadres suffer deficiencies, akin to the Armed Forces. There is again a brain-drain into the corporate sector to be dealt with by them. But the ejections of the pyramidal structure of the Armed Forces hierarchy is absent in their case. This is where lateral sidestepping by the Army into the civil services could afford value-manpower – trained officers with immense management experience in the field, besides polished interpersonal communication skills.

Exchange programmes have often been mooted earlier. Presently, visits are organized for trainees of the various civil services to visit Army establishments in the field areas. Very little is done in converse, that too at a late stage. What is important is to have a *mutual exchange* with slightly longer attachment periods at an earlier stage. Be it research scientists serving in the field for at least a few months of attachment, railway officers getting a prolonged exposure of field area nuances, defence accounts department officials brushing shoulders in high-altitude, or ordnance factory officials utilizing the equipment that they would subsequently provide, information service officers could experience what they would cover later in service; all these could immensely pluck a deep chord of empathy which no letter can re-create. The idea is not that there is only one side of the fence to be shown, but much to understand the constraints of what each of these services face in their day-to-day discharge of duties.



While a soldier may feel that his stature in society would largely be enhanced by such exchange exercises, there may also be other experiences to show that the grass is not so green on the other side of the fence either. In summation, there will result a healthy respect for each other's capabilities, a sense of professional satisfaction of doing one's bit to the best of one's ability.

The Media is the next on the list to be partnered in their quest for the “truth”. Embedded media and defence correspondents serve the requirements of both and need to be nurtured in the right spirit, without jeopardizing security. This has proven to be a successful venture on many occasions and is already underway. However the media continues to feed off the stories that malign the forces at every opportunity. It is essential to afford every avenue to these very correspondents to get a first hand view on professional matters in the field as well – where they would get to see the true picture of the *'unknown soldier'*.

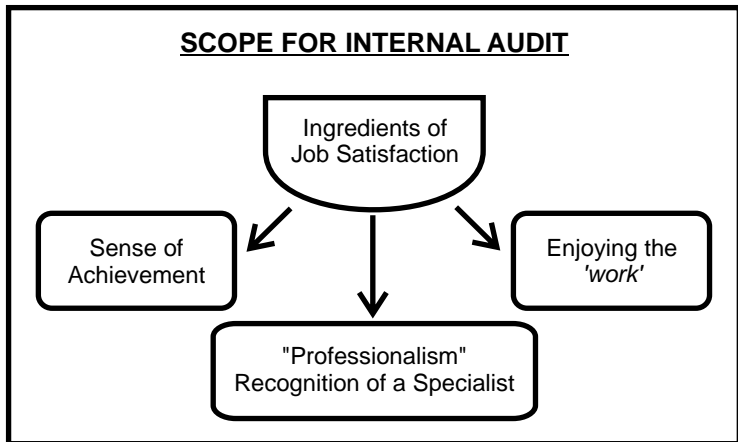
The elements of the judiciary are important addressees too, who can bring in vital changes required on a different plane. Already there is a sense of hesitation in the legal community to defend a “terrorist” in a court of law, in the interests of national security. While the forces battle such elements day-in and day-out in far flung, inconspicuous locations, some recognition of the *services* rendered may appear as a silver lining. However, according a pre-eminent status in the society to the soldier community, in a democracy, may require some deliberation to attain a state of legitimacy. Notwithstanding, the judiciary may be able to support the cause of the much-needed long-term electoral reforms.

There is then the perception of the all-important common man. This simple being, in all walks of life, needs to be made to feel for that anonymous soul in the soldier who braves the heat-and-the-cold, the fire of the enemy and the fury of nature, battling the floods and providing succour in calamities - for just being there when he is needed most. The Indian public is possibly the only community that treats its soldiers the way it does. The rich applause that any and every American soldier returning from Iraq or Afghanistan gets at his port of entry is a stark comparison to how a battalion-strong posse of our jawans may inconspicuously pass through a railway station returning from Siachen Glacier or insurgent-infested Manipur. The Israeli soldier similarly is accorded the highest priority in uniform even when there is no war on - be it in public transport, at the theatre or at any other civic utility. Evoking that dormant sentiment of concern for things military in the common man is something that can be addressed by a variety of agencies. The film and music industry, the electronic media, the internet are just a few examples. The ex-servicemen fraternity has to play a focussed role in the same. The media obviously needs to play its positive and proactive part in this venture too.

Notwithstanding the agencies outside the military domain, there is a cause for introspection too on different fronts. If the services are truly geared up


to offer an immensely satisfying job, are we meeting up to it? How much has its once exclusive work culture been diluted? What actions can be taken in-house to meet up to the self-esteem desired by every uniformed serviceman? Even as we examine the intake potential, one has to analyse the core issue - that of the happiness quotient of the existing officer cadre in the Services. Do we enjoy the recognition of being a professionally-sound *specialist*? Do we continue to be perceived as '*enjoying*' the work content, day-after-day? Are we able to afford an inimitable sense of achievement to the aspiring youth of the country who choose to don uniform?

It is this feedback which is taken first-hand before the young man in the *Civvy Street* chooses to take the plunge. Therefore concerted effort on this account is a pre-requisite to ease out any breakneck tasking ethic and overly demanding challenges that may appear to lack



purpose, while consistently modifying our working sub-culture to accept the tools of latest technology to advantage. Adapting to rapid development may require accepting a professionally tech-savvy rookie's solution rather than a time-tested one!

Where does *the way forward* then lead to? The future will depend on what is initiated *now*. Every small effort towards strengthening the core competence and enhancing the true status of the military in the society will impact on the watchful and discerning youth. There are miles to go, and every step will reach that much closer. There is a vision of a professionally

sound, intrinsically happy and upwardly mobile force, much sought after by the large sections of the aspiring youth as *a premier career option*. A perspective view of the next few decades does show promise - but how it will eventually unfold - only time will tell. 

Notes

- 1 Such long-term deals also ensure unmitigated allegiance to the organization, till the said housing loans are liquidated. It would be prudent to enable softer clauses of lending for the required period of service mandated for the officer, with commensurate harsh premature-exit riders.
- 2 Empathising construction firms could well be managed by ex-servicemen manpower - those who have been absorbed by lateral side-stepping of technically-proficient and experienced officers, wishing to give back to the system, out-of-uniform.

The Train to Lhasa

*Shailender Arya**

The Olympics are over. The tourists and sportspersons from all over the world who flew to Beijing are back after being dazzled by the massive sporting infrastructure of a new China. Years of preparations and US \$40 billion later, a new Beijing had been created for the showcase games with grandiose centrepieces like the Bird's Nest Stadium. Somehow, the Chinese always had a penchant for the grandiose. As early as circa 210 BC, the Qin dynasty had created a huge army of thousands of life-sized Terracotta Warriors. Around the same time, between 220 - 200 BC, the first Emperor of China, Qin Shi Huang built the Great Wall of China. Successive dynasties further improved upon it, creating a massive 6,400 kilometres long wall - the only man-made feature which can be seen from the moon. The imperial dynasties have been since replaced by the communists, and Peking is now called Beijing, but the huge projects continue in quick succession. Among these colossal projects are the US \$25 billion Three Gorges Dam and an ambitious South-North Water Transfer project. However, another massive and recently operational infrastructure project went almost unnoticed. This 1142 kilometres long Golmud – Lhasa rail link is all set to change the logistics, demography and the military complexion of the Tibetan plateau. The American strategists have compared it with the historic completion of the rail link between the east and west coasts of the United States in 1869. The worried Tibetans are terming it as '*the Second Invasion of Tibet*'. Closer home, this massive project has thrown Indian strategic and logistic calculations in a tizzy. While a quietly worried government has sanctioned new mountain

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divisions for the Indian Army and redeployment of Sukhoi fighter aircraft squadrons in North-East, there are other ramifications of this development which go much beyond the infrastructural aspects.

The reasons are not difficult to fathom. Golmud used to be a forlorn military outpost in the Qinghai Province of China. It is called *Gormo* in Tibetan and was part of the Amdo region of the erstwhile Tibet. It was catapulted into a key link in 1979 when the first phase of the Beijing – Lhasa railway line was completed which led from Qinghai's provincial capital of Xining to Golmud. The 814 km Xining to Golmud railway was initially open for only military movement. Later, other trains began to ply on an improved track in 1984. Today, Golmud has major natural gas extraction and shipping facilities, and Israeli firms have been hired to enhance irrigation and farming in the desert that surrounds the city. The fortunes of this town are changing further. On 1st July 2006, at the brightly decorated Golmud Railway Station, Chinese President Hu Jintao cut the ribbon and waved to the *Qing I* train which set out for Lhasa amidst much official fanfare. It was more than significant. Just five decades back Lhasa was a *Forbidden City* to which the yak caravans reached after tiring weeks of journey and crossing of treacherous mountain passes. In 1959, when the Dalai Lama fled from his Potala Palace in Lhasa southwards to India, remoteness of the area kept the Chinese at bay. In another few years, railway lines emanating from Lhasa will crisscross the remaining Tibetan Plateau in all directions. A few of them will lead right up to the doorsteps of India and a now red Nepal, slicing across the mighty Himalayas. We will have to find means other than remoteness to keep the Chinese at bay.

The Chinese Plan

"Where there's a road, a railway can be built."

-Dr. Sun Yat-sen, first president of the Republic of China.

The first idea to connect Lhasa to the Chinese railway system was

mooted by Dr Sun Yat-sen in early 1900s in his capacity as the Director General of National Railway. However, the Republic of China (ROC) and Tibet shared quite a different political relationship in those days and the idea was termed 'fanciful'. In 1950, when the People's Republic of China (PRC) invaded and the troops of the People's Liberation Army (PLA) occupied Tibet, the need for a railway was again felt to supply the PLA troops and the Han Chinese settlers which followed in the wake of the army. The development of railway transportation was vital for the expansion of China's political and economic frontiers in Tibet and elsewhere. In 1959, the line from Lanzhou reached Xining, marking the first arrival of a train to the Tibetan plateau. It entered the landmass at one of its lowest elevations and laid the foundation for the more difficult extensions planned ahead. For many years Xining remained the western outpost of the Chinese railroad. Another beginning was made in 1979 by laying tracks from Xining to Golmud. Much of this construction work was done by prisoners. Lack of finances and deteriorations in Sino-Soviet relations delayed further progress for many years. However, for the Chinese Communist Party (CCP) hierarchy the railway construction remained a key element of territorial integration.

The plans to extend the railway till Lhasa were dropped after Deng Xiaoping assumed power and a liberal Communist Party Secretary Hu Yaobang attempted reforms in Tibet. The issue was thus kept dormant till early 1990s. In July 1994 the Third National Forum for Work in Tibet was held at Beijing by the Communist Party. It exhorted officials to dismantle Tibet's isolation from China and help create “an inseparable organic link” between the two economies¹. Soon, on the 7th October 1994, the push towards Lhasa was formally announced. Under China's Ninth Five Year Plan (1996-2000) a preliminary route survey and feasibility studies were conducted. The Number One Survey and Design Institute of China's Ministry of Railways was instructed to prepare blueprints for a Golmud-Nagchu-Lhasa route and an alternative Lanzhou-Nagchu-Lhasa route².

The recommendations of the State Planning Commission were approved by China's State Council in February 2001 and funds disbursed in the Tenth Five-Year Plan (2001-2005). The work began in early July 2001 on the selected Golmud – Lhasa route. Sun Yongfu, the then China's Vice Minister of Railways, commented that the new rail link from Golmud to Lhasa will have “far-reaching impact in political, economic and military terms”³. He was proved to be quite understating the facts.

Costs and Compulsions

The estimates on the cost of this project vary from US \$3.68 billion (Chinese official figure) to US \$4.2 billion (western estimates). The Tibetans were understandably upset over the negative impacts of this project on their precarious demography and ecology, particularly when the Chinese claimed that it will boost the economy of Tibet. The Tibetans refuted that the limited (ethnic) population of Tibet did not warrant such a massive project. They feared that it will only increase the number of Han Chinese in Tibet and further sharpen the income divide. Independent data shows a wide gap between the 1,861 Yuan per capita income of the rural majority of Tibetans accounting for 85 per cent of the total population and the 8,200 Yuan 'disposable income' of those living in urban areas where there is a high concentration of Chinese immigrants. Further, the Human Development Index, which uses indicators such as education, income and health, of Tibet is only a meagre 0.39, placing Tibet amongst the bottom of 49 officially recognised least developed regions of the world. In stark comparison, the Golmud-Lhasa rail link has been completed at more than three times the amount Chinese government has spent on health care and education in Tibet during the past fifty years⁴. The Chinese, of course, perceive the railway quite differently.

In the Tenth Five-Year Plan (2001-2005), an outlay of 270 billion Yuan (US \$33 billion) was kept for various railway projects in China. Approximately

100 billion Yuan (US \$12.5 billion) of this was spent in the 'western regions', including Tibet. This railway extension in Tibet fits the bill in the "Great Western Development" campaign (*Xibu da kaifa*), initiated by President Jiang Zemin in 1999 to close the economic gap between China's prosperous eastern coastal area and its poor western inland regions. This ambitious program aims to develop the vast and relatively underdeveloped western region, primarily Xinjiang (Sinkiang Uighur Autonomous Region) and Tibet Autonomous Region (TAR). It also covers other Chinese provinces of Qinghai, Sichuan, Yunnan and Gansu, all having significant Tibetan population. The Chinese authorities hope to achieve the goals of this campaign by pouring money into these two regions for local development and encouraging the Han Chinese, the country's dominant ethnic group, which comprises 92 per cent of China's population, to settle there. Essentially, from a heavily populated east with a burdened railroad network, the long-term aim is to shift population, industry and infrastructure westwards into the huge but sparsely populated areas with the railways playing a pivotal role in this shift.

Similar shift in the military assets is expected as China prepares to play a greater role in the Central Asia, besides keeping the Indians under pressure. The cooling temperatures across the Taiwan Strait and a pacifist leadership in Japan have convinced the Chinese to look westwards after having secured their eastern front. China is concerned that its central Asian neighbours are drawing closer to America⁵. In the ongoing Afghanistan campaign, Uzbekistan (from its Kandabad air base at Karshi) and Tajikistan offered invaluable assistance to American forces. The other western neighbour Kyrgyzstan has also permitted a US military base since 2001 at Manas, near the Kyrgyz capital Bishkek. This projection of the American power into the centre of the Eurasian land has been viewed as contradictory to the long-term Chinese strategic and energy interests. Further, in Afghanistan, a relatively pro-America (and pro-India) government has emerged which has reduced ties with Pakistan, potentially

limiting China's influence in the South-East Asia. Therefore, the Chinese need to now focus on its western frontiers justifies the 29.46 billion Yuan (US \$3.68 billion) investment in the Golmud – Lhasa project at an average of over US \$3.22 million per route km.

Economically, the Chinese are likely to break even in few years with the railway projected to double tourism revenues by 2010 and reduce transport costs for goods by 75 per cent in Tibet. On 30th August 2006, two months after the railroad opened, William Mellor of Bloomberg News wrote that “shares in listed companies that do business in Tibet have climbed as much as 300 per cent in anticipation of new markets, cheaper freight rates, and increased tourist numbers.” In 1980, visitors to Lhasa numbered only 1,059, and 95 per cent among them came from abroad. In 2002, an estimated 140,000 visited Tibet. With 1.22 million visitors arriving in 2004, there was an increase of over 1,000 times from the 1980 level. An overwhelming 92 per cent of these visitors were Chinese tourists. The contrast could not be starker. By 2020, Tibet expects 10 million tourists annually (or about four times the current level of the country's entire population). Apart from tourists, the new railroad will bring freight - 7.5 million tons a year by the year 2010, or about three tons for each of Tibet's 2.8 million residents⁶. In return, it is expected to carry almost an equal tonnage of mineral resources in the reverse direction. The railroad will also be used to accelerate mining activities in Tibet. In the past few years, 13 copper belts, with an estimated reserve of over a million tons, and two cobalt deposits, with a combined reserve of 20,000 tons, have been discovered in the vicinity of the railway line. Tibet also holds vast reserves of iron, lead, zinc and other minerals vital to China's economic growth.

More changes are in the offing. With limited industrial capacity in Tibet, the Tibetan economy heavily relies on industrial products from the more developed parts of China. Transportation of goods in and out of Tibet was earlier mostly through the Qingzang Highway (Lhasa-Golmud, National

Highway 109) connecting Tibet to the adjacent Qinghai province. The length and terrain have limited the capacity of the highway, with less than one million tons of goods transported each year. With the construction of the Golmud-Lhasa railway, the cost of transportation of both passengers and goods has been greatly reduced, allowing for a massive increase in volume. It has been ascertained that the cost per ton-km has been reduced from 0.38 Yuan to 0.12 Yuan due to the railway. This 0.12 Yuan (1.4 cents) per km for one ton of cargo is also the official cost for cargo transportation on the Golmud – Lhasa railway, greatly boosting trade and reducing costs. Similarly, a *hard seat* on this train from Beijing West to Lhasa costs merely 389 Yuan (US \$46) for the 4064 km long journey, making it the most inexpensive yet fast travel option for Tibet. As of now, the railway is scheduled to carry 16 trains a day between Golmud and Lhasa on its single track, transforming Lhasa from a *Forbidden City* to another Chinese boom town. Tibetans fear that they may soon be a symbolic minority in Lhasa, carefully preserved for the western tourists. These days many western tourists, disappointed in their quest for a *Shangri-La*, have already begun to report that Lhasa resembles a Chinese provincial city on the make.

Chinese Engineering Prowess

The Chinese call this project as the Qinghai - Tibet Railway (QTR). QTR has demonstrated a quantum jump in the technological and engineering abilities of the Chinese to the world - a projection of its great power status. The completion signifies that the Chinese trains now run on the highest railroad in the world, traversing a region known for high-intensity earthquakes and low temperatures. The railway has no parallels in the world in terms of difficulty of construction, except the 3150 km long Baikal - Amur Mainline (BAM); the 1991 extension of the Trans-Siberian line in the eastern Russia. According to Chinese Government sources, this project involved the permanent employment of 67,000 Chinese technicians and workers and another 16,000 workers seasonally employed

locally. Only a handful of them were Tibetans. A train from Beijing to Lhasa takes 48 hours and crosses some of the most inhospitable terrain in the world including the five major passes of Kunlun, Hoh-Xil, Fung-ho, Tanggula and Nyenchen Thangla. Among these passes, Tanggula at 5072 meters is the highest railway point in the world. In fact, much of the line is between 4000 and 5000 meters altitude with a long stretch of 550 km from Xidatan (in far north) to Anduo (Amdo) in permafrost terrain, presenting unique engineering challenges. In all, 960 km of its tracks are located 4,000 meters above sea level and the highest point at 5,072 meters is over 200 meters higher than the Peruvian railway in the Andes, which was formerly the world's most elevated rail. The QTR boasts of many other world records; the Tanggula Railway Station at 5,068 meters is the highest railway station in the world, the Fenghuoshan Tunnel at 4,905 meters is the world's most elevated tunnel on frozen earth and the Kunlun Mountain Tunnel, running 1,686 meters, is the world's longest plateau tunnel built on frozen earth.⁷

Further, there are about 30 km of tunnels and 675 bridges with the bridges totalling to a length of 160 km. The newly constructed line runs from Golmud, roughly south-south-west, through Nanshankou, Kunlun Mountains, Tanggula Mountains passes in Yushu and Haixi ,Tuotuo Heyan, then over the Qinghai - Tibet border southwards to Amdo, Nagqu (Naqu), Damxung and Yangpachen (Yangbajing), before turning southeast into Lhasa. The railway line runs more or less along the Golmud to Lhasa highway, pipeline and optical fiber cable line. It has two main junctions (Golmud and Lhasa), eight stations and 20 other crossing points. The trains use pressurised passenger cars and special locomotives. Canada's Bombardier Transportation provided the 361 high-altitude sealed passenger cars with oxygen facilities for US \$ 181 million for the project. These passenger cars have special enriched-oxygen and Ultra-Violet (UV) rays protection systems. The General Electric (GE), from its Pennsylvania plant, supplied the 78 custom-built 3,800-horsepower locomotives, at a cost of about US \$150 million.

Further Extensions

In the long-term Chinese plans, Lhasa will be only a key junction on the Tibetan plateau and not the railhead. From Lhasa, the rail link will be extended in all directions on the Tibetan plateau in the next ten years for which US \$ 1.2 billion has been already earmarked. The first extension being planned is westwards to Shigatse (*Xigaze*). Shigatse is the Tibet's second biggest town and the Tashilhunpo Monastery in the town is the traditional seat of the Panchen Lama, the second highest religious figure in the Tibetan Buddhism. The Shigatse prefecture also borders India, Nepal and Bhutan. Work has already begun in July-August 2008 on the construction of a branch line linking Lhasa with this important town which lies 280 km to the south-west of Lhasa. This will be the first branch line for the QTR and is scheduled to be operational in 2011. Further extensions are also to be built to link Shigatse to Zhangmu, and Shigatse with Yadong⁸. The extension of these lines from Shigatse shall make it a crucial railway junction, located quite close to India. Yadong, the projected Chinese railhead for India, is a major trading town near the India-China border. Also called Yatung (or *Chomo*), it is situated at the mouth of the Chumbi valley and is connected to the Indian state of Sikkim via the Nathula Pass. Incidentally, according to the Convention (between Britain and China) of 1890-93, the market at Yadong was opened to (British) India, and the conduct of the Tibetans in building a wall across the road between Yadong and Tibet was one of the incidents that led up to the famous British mission of 1904 to Tibet, led by Lieutenant Colonel Francis Younghusband.

China has unveiled its plans to extend the Chinese National Rail Network to the border with India. After the opening of Nathula pass in Sikkim for trade in July 2006, Sun Yuxi, the then Chinese Ambassador in India informed the media that China plans to extend its railway linking Beijing to Tibet to a newly opened border point in India's northeast and possibly link it

to India's east coast. The envoy said "From Yadung, the Indian border area is only a few dozens of kilometers away. Then, anytime we feel the need we will link it. If the train got through all the way to Kolkata, that will be something. Lots of potential, opportunities will develop there". On the Indian side, New Delhi has plans to build a railway to Sikkim and once complete, the missing rail link between India and China would be less than 100 km. This railway link to Sikkim is expected to branch-off from New Jalpaiguri (West Bengal) towards Gangtok. From Gangtok, the Nathula is 56 km away by road, towards east.

The next major extension under planning by the Chinese is to link Lhasa with Nyingchi in the east. The rail link will head eastwards from Lhasa along the Yarlung Tsangpo River (*Brahmaputra*) to Nyingchi (*Kongpo*)⁹. According to the Chinese's claim, the Nyingchi Prefecture also includes part of the Indian state of Arunachal Pradesh. Bayi Town, the administrative capital of the Nyingchi Prefecture is an important trading town located north of Arunachal Pradesh, at the tri-junction with Myanmar. The Sichuan-Tibet Highway also passes through the Nyingchi County. From Nyingchi this rail link is further scheduled to link up to Dali in Yunnan province. The arrival of rail link at Dali will complete the circuit of the Chinese National Rail Network, linking it up with the existing Western Region Railway network. Dali is connected by rail to the Yunnan's capital Kunming via Guangtong. It is also connected to Chengdu via Guangtong and Xichang.

This Lhasa - Nyingchi - Dali route is strategically important for the Chinese as it runs in an east - west direction almost parallel and quite close to the Arunachal border. It will enable the 14 Group Army (Unit 35201) of the Chinese Army located at Kunming, with its divisions at Dali, Kaiyuan and Kunming to rapidly move westwards from Yunnan to TAR by railway. Similarly, the 13 Group Army (Unit 56005) from its locations in the

Sichuan province shall be able to utilise this linked railway network to move to TAR. It may be noted that this Yunnan - Tibet route, due to its strategic utility, was the main competitor with the Qinghai - Tibet route for the initial link up with Lhasa. In the end, the Golmud - Lhasa route narrowly scored over the Yunnan - Tibet route because of its lower construction time and the lesser cost factor¹⁰. The 1594 km rail link from Dali in Yunnan province to Lhasa would have cost the Chinese US \$7.7 billion and the construction of 601 km of bridges and tunnels. Further, this route may not have been completed before the Beijing Olympics. However, in a booming Chinese economy, cost will soon cease to a deciding factor.

The QTR has also an extension plan to Nepal. In a meeting between Chinese and Nepalese officials on 25th April 2008, the Chinese delegation announced their country's intention to extend the Qingzang railway from Lhasa for another 770 km to Khasa on the Nepalese border. This border town of Zhangmu (Khasa in Nepali and *Dram* in Tibetan) is located 31 km south of Nyalam and is one of the major land entry routes in Tibet from Nepal. Opposite Zhangmu (located in Nyalam County), is the Nepalese town of Kodari with the Friendship Bridge on the Bhote Kosi River connecting the two towns. In fact, the 750 km Sino-Nepal Highway (Friendship Highway) from Lhasa to Kathmandu through Quxu, Shigatse (*Xigaze*), Lhaze, Dingri and Nyalam enters Nepal at Kodari through Zhangmu (Khasa) and the railway is expected to follow the same route till Kathmandu. Nepal had requested that the railway be extended to enable trade and tourism between the two nations. The construction of this extension is planned to be completed by 2013. The likely alignment of this Tibet – Nepal rail link shall be along the Friendship Highway from Shigatse to Khasa, and further till Kathmandu. The Chinese have already commenced work from Lhasa to Shigatse on their side of the project. The progress of this project is likely to be facilitated by the helpful presence of a communist government in Nepal.

Indian Response

While China is mid-way to linking up with India and Nepal, the Indian response is only limited to planning and feasibility studies. Presently, the trucks carrying Indian goods from Birganj to Kathmandu have to travel 220 km. A train from Birganj to Kathmandu that cuts through the mountains will be a mere 80 km, cutting travel time and costs. India does plan to expand its rail links with Nepal, proposing to extend across the Nepal border to Kathmandu the rail line at present connecting Raxaul with Birganj. Birganj in Nepal is located south of Kathmandu along the Tribhuuvan Highway and just across the Indo-Nepal border in Bihar, lies the Raxaul Junction (Broad Gauge) of the Indian Railways. The technical and financial feasibility of five other routes viz; Nautanwa in India to Bhairahwa in Nepal, Nepalgunj Road to Nepalgunj, Jogbani to Biratnagar, New Jalpaiguri to Kakrabitta and Jayanagar to Bardibas is being studied¹¹. India also plans to run rail links to Bhutan, which like Nepal is landlocked and sandwiched between India and China. There are plans to connect Hasimara in India with Phuentsholing in Bhutan, Banarhat to Samtse, Rangia to Samdrup Jongkhar, Kokrajhar to Gelephu and Pathsala to Nanglam. The plan to link Sikkim has not been yet formally announced but the alignment is expected to follow the existing road link from Siliguri (with its railway station at New Jalpaiguri) to Gangtok. Presently, Sikkim has no railway network and a poor road density of 28.45 km per 100 square km against the national average of 84 km. No plans for development of railway network in Arunachal Pradesh have been yet intimated by the Indian government. This border state has an even poorer road density of just 18.65 km per 100 square km.

Military Logistics

Logistically, Tibet is a difficult place for troop movement and sustenance. Lack of ground communication facilities rather than shortage of troops

have been the limiting factor for military operations on the entire Tibetan plateau. Before the railway was constructed, the principal route into Tibet was the 1160 km long Qingzang highway (National Highway 109) which connects Tibet to the neighbouring Qinghai province. It was built in the 1950s and has limited load carrying capacity, apart from numerous bottlenecks. The travel time on this highway between Golmud to Lhasa via Nagqu is 72 hours. The other important land route is the National Highway 318 (connecting Linzhi and Lhasa) which is in fact the southern section of the Sichuan-Tibet Highway (Chuanzang Highway). In the event of war or future large-scale riots in Tibet, this highway will be the key passageway for combat troops from the Chengdu Military Region (CMR) to enter Tibet. However, this key highway runs across the Minjiang River and the Daduhe River in a region with an average altitude of 4,250 meters above sea level, making it susceptible to natural disruptions or assault by organised rioters. China has also recently commissioned the construction of a US \$ 3.5 billion western highway network linking Lhasa with Urumqi in Xinjiang province. The fully metallic highway will be extended to Kasghar bordering Central Asia and Hotan, and it will be capable of carrying loaded battle tanks and heavy armoured carriers, while selective commercial activity will be allowed on it to enable the Chinese to transport their products to the neighbouring countries. In the recent years, China has also made great effort to revamp the Qinghai-Tibet highway and the Sichuan-Tibet highway. The National highways 214 (Lanzhou – Xining – Yuchu), 317 (Chengdu – Nagqu – Lhasa) and 109 (Qingzang highway) – the shortest routes into Tibet by land from China, are now all asphalted, but the road communication is far from reliable.

The construction of the QTR has altered much of these military logistics. The travel time from Golmud to the Tibetan capital has been drastically reduced from 72 hours to 16 hours with a direct impact on the troop movements. As reported by Xinhua (New China News Agency), the

Chinese government itself has touted the railway as a means of transport for troops, saying that not only will the railway improve the efficiency of the army, but the army will improve the efficiency of the railway. Lhasa is now connected by train right till Beijing and Shanghai. There are trains everyday scheduled for Lhasa from, among other places, Chengdu, the capital of southwest China's Sichuan Province. It is also the headquarters of the Southwest Military Region, called the Chengdu Military Region (CMR). It is one of the seven Military Regions of China - an equivalent of an army command, which faces India in the North East. It is reported that in the recent unrest in Tibet in March 2008, the T-90 / 89 armoured personnel carriers (APCs) used in Lhasa were from the 149th Mechanised Rapid Reaction Division (Unit 56016) of the CMR. These APCs were transported first from Chongqing (Chongqing) to Xining by rail/road, and then to Golmud and Lhasa by train on the QTR. This deployment reportedly took only about 48 hours as the 1956 kilometres distance between Xining and Lhasa was covered on QTR.

Analysts point to the military implications of the railroad, saying it could be used to beef up China's already heavy military presence in Tibet, including the deployment of tactical nuclear weapons. In 2001, Jane's Intelligence Digest reported that 'the PLA considers it necessary to build up a network of roads and mule tracks to bring military hardware and troops to the forward areas of the disputed border (with India).' According to defence expert William Triplett: 'With even a single line, the PLA could move about 12 infantry divisions to central Tibet in 30 days to meet up with their pre-positioned equipment.'¹² Most of the military experts agree with this assessment that in military terms, this rail link gives China the capability to mobilise up to 12 divisions (approximately 12,000 men make a Chinese division) a month. Up North in the Qinghai province, Golmud, the start point of the QTR, has now been turned into a major military base with rail connectivity. It is located strategically to cover both the unrest-prone provinces of Tibet and Xinjiang. Further, the Lanzhou Military

Region (LMR) with its headquarters at Lanzhou in Qinghai province is also in proximity of Golmud and connected with Golmud by rail on the Longhai Line, the major East-West railway of China. LMR covers a vast area covering the Xinjiang, Qinghai, Gansu, Ningxia, and Shaanxi provinces. In Indian context, LMR is responsible for the Aksai Chin and the other Chinese areas in Xinjiang across the Eastern Ladakh. The International Institute for Strategic Studies attributes the Military Region with an estimated 220,000 personnel including the 12th Armoured Division (Unit 84701) at Jiuquan in Gansu province. The movement and rapid deployment of this equipment-intensive division will be greatly facilitated by the QTR.

Presently, the annual transport capacity of the QTR is approximately 5 million tons, which is projected to increase to 7.5 million tons by 2010. This translates into an average capacity of 13,888 tons per day. The average load capacity of one Chinese train car is normally 60 tons, with about 20 cars in each cargo train. This would mean that each train could transport 1,200 tons, and thus 11 trains travelling both ways would be enough for each day. In time of war, the actual number of trains running on the QTR could double to roughly 20 trains both ways each day. In a war scenario, calculated on the basis of being able to transport most of the heavy equipment of a whole mechanised division, within 48 hours the PLA would be able to transport approximately 10 light mechanised divisions and some heavy mechanised divisions through the railroad to Tibet from the LMR and CMR within 30 days.¹³ Further, considering that the total weight of the equipment and combat material needed for one rapid reaction division of the Chinese army is around 15,000 tons, the QTR could transport a whole rapid reaction division on one average day. In other words, within every one-and-a-half to two days, China could move one rapid reaction division from the CMR or one rapid reaction division from the LMR to Tibet.¹⁴ Thus, the railway would now allow the 61st Plateau Rapid Reaction Motorised Division of No. 21 Group Army under the LMR

to enter Tibet within a much acceptable time-frame. This Division (Unit 84802) is located at Baoji on the Longhai railway line between Lanzhou and Xian.

The railway also features prominently in the operational plans of the PLA's Rapid Reaction Forces (RRF). The PLA has established a regiment-level Army Special Force (ASF) in every Military Region (MR) as an RRF unit, directly under the MR headquarters command. The total strength of ASF may be as high as seven regiments and twenty-four battalions, or approximately 25,000 personnel. The RRFs are meant to be quickly deployed in the conflict-prone peripheral areas of China, such as Xinjiang, Tibet, Taiwan, and the South China Sea. The PLA has conducted various exercises since 1995, concentrating particularly on long-range and intraregional rapid mobile deployment. To this end, RRF combined exercises were carried out in 1995 and 1996 in the Gobi desert, the Tibetan and Xinjiang highlands, and in the south-western tropical forests to enhance the RRF's adaptive survival capabilities. It is learnt that in the LMR, a 1000-mile railway transport rapid-deployment exercise was held in August 1996. The purpose of the railway transport based exercise was to enhance mobile deployment capability¹⁵. Post completion of QTR, the operational readiness as well as the deployment timings of RRFs (ASF) in LMR and CMR have been further boosted.

Internally Stabilised Tibet

China's *Qinghai Daily* has described the railway as the "political frontline in consolidating the south-western border of the motherland"¹⁶. The completion of QTR has clearly tightened China's grip on Tibet, which is much prone to unrest due to various restrictive policies of the Chinese hierarchy. In 1989, when a major unrest occurred in Tibet and the curfew was imposed in Lhasa, the 149th Division was the first PLA combat unit to arrive on the scene. The 149th Rapid Reaction Motorised Division of No.13

Group Army of the CMR is located at Leshan/Emei in Sichuan province. At that time, the army troops entered Tibet via the Sichuan-Tibet highway which imposed considerable delay. However in March 2008, within 48 hours of the start of the riots in Lhasa, T-90/89 armoured personnel carriers (APC) and T-92 wheeled infantry fighting vehicles (IFV) of the 149th Division appeared on the streets. This is indicated by the fact that the PLA soldiers on the T-90/89 vehicles on the streets of Lhasa were all wearing the “leopard” camouflage uniforms specifically designed for mountain warfare operations. These uniforms have appeared in the video footage of the 149th Division during exercises. This rapid arrival of the Division using QTR relieved pressure from the troops of the No. 52 and No. 53 Mountain Brigades, which are located comparatively closer to Lhasa at Linzhi and Milin respectively for quicker response in case of unrest.


The political stability of Tibet is a demanding yet necessary pre-requisite for any military build-up against India. It is a historical fact that one of the main reasons for the PLA to withdraw in November 1962 after a one-month occupation of Arunachal Pradesh and Ladakh was the serious unrest in Tibet at the time. This has been documented by the late Panchen Lama, the highest Tibetan authority after the Dalai Lama's flight to India in 1959, in a 70,000 character petition to then Premier Zhou Enlai. The petition is politely called '*A Report on the Sufferings of the Masses in Tibet and other Tibetan Regions and Suggestions for Future Work to the Central Authorities*'¹⁷. Presently, anywhere between 300,000 to 500,000 troops are stationed in Tibet, including 200,000 permanently stationed in the TAR. China also has 14 military airfields and 10 missile bases in Tibet. In TAR itself; according to the Dhramshala based Tibet's government-in-exile,¹⁸ called the Central Tibetan Administration (CTA), there are six sub-military districts, having two independent infantry divisions, six border defence regiments, five independent border defence battalions, three artillery regiments, three engineers' regiments, one main signal station and two signal regiments, three transport regiments and three independent

transport battalions, four Air Force bases, two radar regiments, two divisions and a regiment of para-military forces (referred to as *Di-fang Jun* or 'local army'), one independent division and six independent regiments of People's Armed Police (PAP). In absence of any Indian threat as such, many of the regular army formations, particularly the rapid reaction divisions were stationed primarily to quell any rioting in Tibet. The two mountain infantry units of the Xizang Military District, which forms the Tibet garrison, are also used for internal security. However, the recent movement and deployment of PLA units for internal security was very rapid, wiping out any Tibetan hopes for any sustained armed uprising. The use of QTR meant that there was minimum requirement of air support from the 2nd Army Aviation Regiment, based at Fenghuangshan in Sichuan province. Therefore, the recent improvement rail infrastructure on the Tibetan plateau has thus greatly assisted China in maintaining its grip over Tibet and gaining moral ascendancy over the disaffected Tibetan groups. Further extensions of QTR may permit the PLA troops in Tibet to hand-over the internal security tasks completely to PAP and focus their attention on India.

Conclusion

The Golmud – Tibet railway is a reality, all set to visibly alter the logistics, economics and military dynamics of the region. It is also a prelude to the massive military build up in the central and western parts of China by asset relocation and military readjustments. The May 2008 discovery of a massive new Chinese missile base at Delingha in central China where the Chinese army Second Artillery Corps 812 Brigade has deployed nuclear tipped DF-4 and DF-21 missiles is a pointer in this asset relocation. Also, the commencement of the QTR has marked the end of Himalayas as a barrier to Tibet, and in fact to anywhere else including India. In another decade, the planned extensions will also be reality. Apart from the southern extensions towards India and Nepal, it is also planned that in the next

twenty years, the QTR network will reach northwards to the Inner Mongolia Autonomous Region. The construction of the railway lines and the roads in China have always been prelude to greater developments. The building of motor-able roads into Tibet began as early as 1950. It was in consonance with Mao Zedong's orders to the PLA as it prepared to annex the territory: "*Advance while building roads.*" It may also be recalled that it was the issue of Western Highway passing through Aksai Chin which acted as the trigger for the 1962 war with India. This China National Highway 219, connecting Tibet and Xinjiang was built as a reliable and an all-weather land route to a rebellious Tibet, as well as to keep the volatile and Muslim majority Xinjiang province under check.

Similarly, the strategic, military and political reasons have scored over the economics of the QTR. The railway has tipped the logistics of troop deployment, mobility and sustenance overwhelmingly in favour of the Chinese on the Tibetan plateau. This has direct military implications for India which has a persisting and almost intractable boundary dispute with the Chinese. The recently renewed Chinese posturing in Arunachal Pradesh and Sikkim may either turn out to be a merely a pressure tactics or an ominous precursor of conflict. Either way, the initiative is with the Chinese. However, infrastructure development on a similar scale on the Indian side can prevent the Chinese using the communication and logistics advantage to further their military interests. This will sharply boost the trade volumes; a proven antidote to conflict, particularly in the Chinese context. Indian investment in infrastructure shall also prevent the communities inhabiting the Sino-Indian borders to look towards China as a vastly superior and tempting economic model. The train to Lhasa can be heard on the Indian frontiers. In the coming years, when this gleaming train reaches the Indian borders, whether it shall be greeted by the existing mule-tracks or by another train from New Delhi shall be the fulcrum of future relationships with China. 

Notes

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RMA and India's Military Transformation

*V. K. Kapoor**

Introduction

The attitudes of the military globally towards revolution in military affairs (RMA) have largely been influenced in recent times by the US Operation Enduring Freedom in Afghanistan and Operation Iraqi Freedom in Iraq which have demonstrated the technological prowess of the US military. In the former campaign the employment of Special Operations Forces (SOF) to direct precision air power was a vital component of US operations to achieve rapid success in combination with the Northern Alliance ground troops and it was perhaps the first time that the world saw a transformed US military in action. What was amazing was that the US military was able to project power over very long distances with relatively small numbers of troops.¹

The operations in Iraq once again provided an insight into a strategy of how relatively smaller number of troops using modern weaponry and networked digitized communications together with integrative technologies (C4ISR) were able to wrap up a military operation with precision and speed. However, there is a down side also because many military analysts point out that the operations in Afghanistan and Iraq are still ongoing and though the new technologies may have greatly assisted the US forces in achieving a quick military victory initially, but they have not been able to secure peace despite increasing the troop strength from

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time to time. While this is true, nevertheless these two wars have spurred the military leadership all over the world to review their military doctrines, organisations, force structures in light of the changes observed in the method of waging conflicts by employing new technologies. The fact is that many nations are discerning that with the rarity of full scale state to state wars, and the future challenges being at the lower end of the spectrum of war, the forces that they have would become more efficient and usable by the adoption of new technologies and new methods of waging wars.²

Dilemma Of Indian Military

A survey of India's immediate and strategic neighbourhood highlights the following types of conflicts/violence which are likely to affect security and stability around India, and which may impact on the Indian military's employment and deployment in the future are: Limited conventional conflicts and border wars against traditional adversaries due to territorial disputes and unsettled boundaries, ethnic and sectarian violence, insurgencies, narcotics/drug wars, illegal immigration, religious fundamentalism, terrorism (local and international variety), conflicts which may arise due to big power rivalries, proliferation of nuclear weapons, WMD falling in the hands of terrorists, wars to secure resource areas, and piracy and terrorism at sea, on land and in the air.

Organisational structures for conventional wars/limited conflicts under nuclear over hang already exist but they need to be remodeled, re-equipped & reoriented to conduct joint/integrated battles in digitized battle space and to have the necessary flexibility to undertake other types of operations which lie at the lower end of the spectrum of conflict, at short notice. Additionally India faces serious internal challenges, many of which have risen through bad governance, poor administration, inadequate law and order and rampant corruption. The military may well be required to aid

civil administration to stabilize situations arising due to the above reasons. In essence the Indian military faces greater challenges than any other military in the world and hence needs to study the transformation concepts carefully to cater for the enlarged spectrum of warfare contextually.³

Aim

This article examines the key technologies, doctrines and organisational reforms generated by the current IT related RMA and the response of the Indian military so far.

Definitions

Definitions of the ongoing RMA are wide and varied and are dependent on the background, experience and preferences of military analysts. These range from simple definitions explaining the essential nature of the RMA to those that highlight its defining characteristics and those that describe its specific elements. Colin S Gray in his book “Strategy for Chaos” describes RMA differently. He says: “The character of war is always changing, but from time to time the pace of change accelerates or appears to do so with the result that there is a change of state in warfare. War must still be war but it is waged in a noticeably different manner.” This is what the current information technology driven RMA has accomplished.⁴

The current revolution has emerged from the developments in the last decade and a half of the Cold War. It has five central attributes: *the ability to strike with precision irrespective of the range; the use of stealth to penetrate defences; the emergence of unmanned warfare; the operational exploitation of space; the ability to move information rapidly across an integrated communication network and exploit effects of joint forces integration.*⁵

Key Technologies

Focus is on military capabilities that make maximum use of modern electronics and computers to improve combat capabilities at modest cost. This philosophy is termed as system of systems approach to military modernisation, as it places less emphasis on major weapons platforms than on what they carry and how they are networked. The key technologies are discussed in the succeeding paragraphs.

Precision-Guided Munitions

Today's precision-guided munitions (PGMs), encompass “smart” or “brilliant” weapons and include a host of weapons that range from missiles to individual warheads to defences against enemy smart weapons. In the US, the Tomahawk cruise missile, guided by the Global Positioning System (GPS), can reliably hit a target the size of a small room from 1600 kilometers (1000 miles) away. The US Army's Tactical Missile System will be able to destroy battalion-sized formations of moving armoured combat vehicles at ranges in excess of 300 kilometres when it is loaded with the Brilliant Anti-Tank (BAT) sub munitions. Combat aircraft today can engage targets with the Joint Direct Attack Munition from a stand-off range of about 100 kilometers and hit their targets by day or night under any weather conditions.

It is reported that the total quantum of PGMs used by the US Army in Vietnam was just 0.2 percent of total munitions; the ratio increased to 8 percent in 1991 Gulf War and rose to 35 percent in Kosovo. In the Afghan and Iraq wars of 2003, 56 percent of munitions were PGMs. These munitions have also enabled the application of “precision force,” that offers the possibility of destroying military targets without substantial “collateral,” or civilian damage. The US Air Force has phased out almost all unguided bombs in their inventory. Their focus is on acquiring stand off

weapons such as sensor fused weapons (SFW) and low cost autonomous attack system (LOCAAS). SFW consists of ten sub-munitions, each containing four “skeet” anti-armor warheads equipped with passive infrared and active laser sensors. The SFW's sub-munitions descend by parachute, and as they near the ground, they propel their skeet warheads outward in a radial pattern. A single SFW can search for and engage stationary and mobile ground combat vehicles within a 30-acre area. LOCAAS is a 36 inch long, 100-pound, turbine-powered, winged weapon that can loiter over the battlefield for up to 30 minutes and use its laser-radar sensor and rapid automatic target recognition (ATR) capability to identify and track multiple dispersed targets, including tanks, infantry fighting vehicles, missile launchers, and other combat vehicles on the move. The search footprint on the ground of each LOCAAS is over 80 square kilometers.⁶

Stealth

Technological advances in the area of stealth are most significant. Stealthy platforms can penetrate high-threat areas and deliver precision-guided munitions. The US Air Force already has a fleet of stealthy combat aircraft including the F-117 and the F-22 Raptor, the air-superiority fighter. The multirole Joint Strike Fighter, which is now being developed for the US Air Force, Navy, and Marine Corps, for Britain's Royal Navy, and for the air forces of several other countries, will have significant stealth characteristics. It is scheduled for initial deployment by 2010. By that period the US Air Force also expects to field a stealthy Unmanned Combat Aerial Vehicle (UCAV).

The contribution of F-117, the Night Hawk, during the Gulf War in 1991, was quite remarkable. Targets in heavily defended central Baghdad were engaged almost exclusively by the F-117. Not a single F-117 was shot down despite the sophistication of Iraq's air defence network over the

course of some 1,300 sorties. Although this aircraft flew less than two percent of the total attack sorties against Iraq, the F-117 struck nearly 40 percent of the strategic targets and remained the centerpiece of the strategic air campaign for the entire war.

America's nuclear-propelled submarines are the stealthiest in the world. The US navy's next-generation destroyer is expected to be a much larger surface combatant but will have substantially lower signature levels. European navies, in particular the Swedish and French navies are leading the way in surface-ship stealth design. Stealth technologies are also being embraced by ground forces and are slowly making their way into all modern armies' re-equipment programs. For example, the US Army's *Comanche* armed reconnaissance helicopter incorporates “stealthy” features designed to protect the aircraft from visual, radar, and thermal infrared detection. Similarly, Britain's new armoured fighting vehicle, the *Warrior 2000*, has lower thermal and acoustic signatures than its predecessor. This characteristic was discussed in the context of future tank design for the Indian Army during their international seminars on future tanks and infantry combat vehicles in November 2007 and July 2008.

Stealth technology requires continual advances because the current stealth technologies will most likely be defeated within a few years by advances in radar and infrared technologies. Similarly the equipment in use such as stealth aircraft, lose their capabilities through wear and tear caused to their radar-absorbing materials. Exposure to water and humidity also degrades the low-observable enhancing surfaces on the aircraft.

Future platforms may incorporate a new generation of stealth technologies such as active signature nullification; visual signature control using photo chromic, thermo chromic, and electro chromic materials; next-generation stealth coatings, films, and radar absorbent material (RAM); and adaptive “smart skins” that leverage advances in micro electro mechanical systems (MEMS) and bio-mimetic materials.⁷

Battle-space Awareness

The potential of new military technologies to reduce the “fog or war” could change the way wars are fought. Sensors in satellites, manned aircraft, or unmanned aerial vehicles (UAVs) can now monitor virtually everything that is going on in a particular battle area, dramatically improving battle-space awareness resulting in complete “situational awareness” (information of own and enemy troops, terrain and weather characteristics) of commanders at various levels.

Improvements in the GPS satellite navigation network of the US, which now presumably have twenty-eight satellites, compared to sixteen during the 1991 Gulf War, have dramatically improved space-based sensor capabilities. Depending on the nature of the terrain, America's Joint Surveillance Target Attack Radar System (JSTARS), an airborne ground surveillance system, can display the position of vehicles in any weather within an area of two hundred square kilometers. JSTARS upgrades will enable these aircraft to locate, track, and identify vehicles even in mountainous terrain. For surveillance of the airspace, airborne warning and control system (AWACS) aircraft provide surveillance capabilities. The Indian Air Force (IAF) is reported to be acquiring the PHALCON system mounted on Russian IL-76 aircraft from Israel while Pakistan is reported to be acquiring the ERIEYE, airborne early warning and control system (AEW&C) system from Sweden. In view of the future threats and challenges India should also be examining an airborne ground surveillance system linked to a satellite navigation network of defence satellites.

Unarmed aerial vehicles (UAVs) for strategic roles are another area of development which promises to revolutionise surveillance capabilities. The US armed forces are also using them for combat role. Their medium-altitude, long-endurance *Predator* UAV and the high-altitude *Global Hawk* UAV can loiter on station for twenty-four hours or more and provide

specific imagery within a few minutes of the request. Both have been tried out in operations in Afghanistan and in Iraq. Indian armed forces are in a nascent stage in this context. They have acquired the Searcher and the Heron UAVs from Israel and have developed Nishant indigenously but these are designed purely for tactical surveillance. Induction of unarmed combat aerial vehicles (UCAVs) would become mandatory in the future for the variety of challenges that are likely to face India in the plains as well as and in the mountains. India also must learn to fight without necessarily putting boots on the ground on all occasions. Strategic and operational compulsions may dictate adoption of such methods.⁸

Command and Control Architecture

The most significant technology in the current RMA is the one which increases battle-space awareness. Enhanced awareness can only be acquired by “digitising” the battlefield. That is to say, digital technology is built into aircraft, tanks, artillery, and individual soldier systems, with the intention of providing commanders with “situational awareness”, an instantaneous and complete picture of the battlefield. The US army has already fielded its first digitised division, the Fourth Infantry Division (Mechanised) in Iraq. Enhancing battle-space awareness together with a command and control architecture to act on information received requires advanced command, control, communications, computers and intelligence processing (C4I) systems. Automation of command and control systems, have incrementally moved from C3I, to C4I, C4 ISR (SR stands for surveillance and reconnaissance) and now C4I2 (Intelligence and Interoperability) SR in order to meet the demand for real time, robust, reliable and efficient command and control systems. By reducing the information-decision-action loop to a matter of minutes, advanced command and control systems have the potential to allow a commander to control a battle from one moment to the next. This will also result in “information dominance” of the battlefield and confer battle-winning advantages.

A recent interview of the Director General Information Systems (DGIS) of the Indian Army, conducted by the author, and published in SP's Land Forces 4 of 2008, is revealing regarding our aspirations and the extent of progress in the army which is also somewhat indicative of the overall progress in this field. The DGIS states:

“Indian Army is in a phase of transition from conventional warfare to information enabled warfare i.e. from platform centric to network centric warfare. The full realisation of any such revolution is possible only with technological development, organisational adaptation, and most importantly a national will. An effective and technologically sound IT force along with robust communication networks has been created to facilitate real time sharing of information and quick decision making so as to achieve information superiority. A road map has been formulated by which we can progress steadily towards being a potent IT force. We have identified the development of C4I 2 systems as a major thrust area for modernisation of our army. Development and fielding of automated operational and information systems for various levels of operations from Army Headquarters to Battalion headquarters to individual soldiers are in progress. Command Information and Decision Support System (CIDSS), Artillery Command, Control and Computer System (ACCCS), Battlefield Support System (BSS), Air Defence Control and Reporting System, and Battle Management System (BMS) are the major projects under development. Integrated together with requisite communications, these systems will provide near real time “Sensor to Shooter” links to make army a network centric force.

Interoperability between the three Services is a problem facing not only the Indian Army but many other armies the world over. Since the systems were conceived and developed in stand alone modes, their integration into a system of systems in a seamless manner is a

technological challenge. We are working in the direction finding appropriate solutions to that and a common network centric operations philosophy is being worked out. The integration at Headquarters Integrated Defence Staff level is ensuring the interoperability and synergy at the inter-services level.”

Progress in most projects mentioned above is very slow and the interoperability with other services is presently not on the horizon. Therefore time critical targets will inevitably suffer from delayed engagement. Limited technological comprehension at higher levels, short tenures of project managers due to career enhancement requirements of the armed forces, inadequate private industry participation and Army's natural conservatism in taking advice from non-government sources, are some of the drawbacks which are adversely affecting the entire process of transformation.⁹

Doctrinal changes

Joint Doctrine

The RMA is bringing about an increasingly integrated battlefield, because technology is achieving the synergy and objectives of combined arms operations and joint operations. The army, navy and the air force will be able to work more closely together despite their usual turf driven differences which prevent them from achieving the requisite jointness/integration. Future scenarios will see air force shaping the battlefield for ground forces and being more responsive to ground forces requirements. Airlift assets will transport troops to the theatre of operations. Manned, unmanned, and satellite surveillance platforms would operate throughout the campaign, supporting all three services, while naval forces could provide offshore logistical support, sea lift, and precision fire capabilities against ground targets. “Jointness” refers to

increased operational integration among the various components of the armed forces, whereas “combined” operations involve the military services of various countries working together. This trend towards joint and combined operations will necessitate *interoperability*. Indian armed forces have just begun examining this phenomenon.¹⁰

Naval Aspects

The key shift in naval doctrine is towards littoral warfare. Naval experts expect that most future contingencies will require the navy to project force “from the sea,” directly ashore, whether in the context of a regional war or a peacekeeping operation. Land-attack cruise missiles which were earlier considered as strategic weapons are now being employed to strike tactical targets ashore. India Navy has the Brahmos and the KLUB missiles but their range is limited. US navy is developing the Land Attack Destroyer to provide precision firepower in support of ground troops and marines. The littoral region is a perfect battleground for joint warfare, because effective operations in this environment require the navy to work closely with the army.

Another important doctrinal change is a shift from platform-centric to network-centric warfare. This concept places emphasis on the sensor and surveillance systems of a group of warships, submarines, or aircraft, rather than on the particular attributes of the platform itself. Critical to this approach is the timely exchange of data among many diverse platforms, in order to reduce reaction time to an absolute minimum and deny the enemy a window to respond.

Indian Navy hopes to acquire a full spectrum maritime capability which would encompass defence of the Indian Peninsula up to the Indian Ocean Rim, against all contingencies; defence of own sea lanes of communication (SLOC) and ability to interdict enemy SLOC; dominate

enemy's littoral and engage in joint operations against the littoral; protect our sea borne trade, our energy security; security of 7,516 km of coast line and EEZ of over 3 million sq km, and acquire the naval component for the expeditionary force and for out of area tasks.¹¹

Land Warfare Aspects

While land wars will continue to dominate the region, their conduct and manner of employment of forces needs to be examined. The unpredictable nature of the threats in today's international security environment together with the technological advances necessitate that military forces have the ability to respond quickly to almost any situation. This, in turn, demands smaller, more mobile and flexible ground forces that are still highly lethal. This will be possible with enhanced reconnaissance and surveillance systems integrated through communications to weapon systems with precision-guided munitions. However the Indian military in the regional context faces the additional threat of conventional conflicts, waged in the backdrop of a nuclearised environment, against traditionally hostile adversaries. Such wars are likely to be also accompanied by low intensity conflict involving insurgencies and terrorism and other forms of irregular warfare (non-traditional modes of warfare). The Chinese call it war beyond limits or “Unrestricted Warfare” where the aim is to implode a state from within. This has also been termed as fourth-generation warfare by William Lind.¹²

The transformation of the Indian army will involve a change from industrial age army, trained, equipped, and postured to undertake conventional offensive and defensive operations to an information age army capable of simultaneously fighting high intensity conflicts together with insurgencies and terrorism which may be home grown or sponsored by states or powerful non-state actors or a combination there of. Simultaneously it will have to guard against cyber attacks, bio agents and

media manipulation and other forms of irregular warfare. While the above activity is being undertaken at short notice, the nation may well be involved in UN peacekeeping and peace enforcing operations as a part of an ongoing UN mandated operation. Thus the combat capabilities of the armed forces have to cater for hybrid forms of war including some in which there are no recognised rules of warfare. Hence, organisations will have to be flexible to adapt themselves to the required situation which will demand greater skills from the officer cadre and the soldiery at all levels. Here the noteworthy aspect is that the combat capabilities of army units and formations can be multiplied with information age technologies which could confer greater warfighting capabilities on smaller combat formations, thus eliminating the need for large troop build-up in the conflict area. Future capability will result from the ability to quickly reduce the ambiguity of a situation, to respond flexibly, and to use force, where necessary, with precision and accuracy.¹³

Air and Space Aspects

With the advent of precision guided munitions combined with accurate reconnaissance, surveillance and target acquisition systems and GPS aided navigation systems; modern technology has given airpower the capability of destroying targets with single digit CEP and with least amount of collateral damage. The effects of air power in high intensity battles are fundamentally greater than before. Given the wherewithal these characteristics endow air power with the ability to psychologically and physically imbalance an opponent and sometimes even achieves strategic aims set by the national leadership with highly selective employment of land forces. However while the air force can make material contributions to and significantly shape operational success, their claims about primacy of air power are overstated. Kosovo viewed objectively is a better case for the capacity of adaptive adversaries to negate technical edge and preference for stand off warfare. Afghanistan was another case where air

power made remarkable contributions. Precision strikes with the help of a small contingent of US Special Forces gave rise to claims of pin point bombing. But overall this conflict reinforced the lessons of Kosovo. One cannot afford to overlook the role of Northern Alliance which compelled the Taliban to flee or ignore the Tora Bora operations where due to lack of ground forces Al Qaeda members were able to make good their escape into neighbouring Pakistan. The utility of air power varies across different types of conflicts. If state to state wars are going to become a rarity in the future, then there will be no state infrastructure to provide a large number targets for destruction, then air power will be reduced to being, a strategic deterrent. Where warfare becomes diffused the employment of air power will become highly selective thus reducing the so called air power dominance. On the other hand in high-intensity combat, air power will shape the battlespace such that the main role of land forces would now be to secure a victory, rather than achieve it.¹⁴

Military experts predict that the coming military revolution will also witness the militarization of space, with warfare occurring in space as well as on land, at sea and in the air. To counter these developments the US Army has developed and tested a ground based satellite weapon system involving a powerful laser.¹⁵ China's new anti-satellite weapon, demonstrated on January 11, 2007, destroyed a Chinese weather satellite 865 km above Earth. Similarly on 20 Feb 2008 the USS Lake Erie launched a Standard Missile-3 which traveled at 17,000 mph over the Pacific Ocean to destroy a non-functioning National Reconnaissance Office satellite. Future threats to satellite systems could include satellites armed with lasers, as well as electronic jamming devices and viruses that could shut down the flow of information.

Organisational Reforms

Successful conduct of war requires responsive, well-trained and well-led units and formations whose organisation is designed to defeat the opponent

based on the new technologies, new weapon systems and new command and control architecture. Military experts often point out that the invention of the tank did not bring about an armoured warfare revolution until Germany had placed it in the context of a Panzer division, a combined arms organisation built around the tank ably supported by artillery, engineers, and infantry. Today's organisational transformation requires that with the shift from “mass destruction” to “precision warfare” comes a parallel shift from mass armies to smaller, more highly educated, and capital-intensive professional armed forces whose units are commanded by a more decentralized decision-making structure and can be specifically tailored to the task at hand. The emphasis on high-quality weaponry has reduced the relative importance of numbers and placed a premium on high-quality troops.

A major shift in the organisational structure will be at the decision making levels. So far we have been used to the bureaucratic organisation which has dominated the industrial age. This has to give way to decentralised decision making of the information age. The army for instance may have to de-layer itself by removing certain headquarters; say for instance the division headquarters. The Corps can directly command Brigade Groups which are smaller in size and self sufficient in all respects and have equal if not greater amount of fire power due to networking of all entities. The division headquarters can be retained for peace time coordination, administration and training.¹⁶

Response of the Indian Armed Forces

One can quite confidently state that with the current RMA a “strategic moment” has arrived. While everyone acknowledges that war must still be war, yet all seem to feel that it must now be waged in a noticeably different manner. The fact that all three Services are excited about Network Centric Warfare (NCW) is evident from the statements of the Chiefs of all three Services which have been appearing in the media from time to time.

NCW also known as information based warfare is the product of convergence of certain key technologies such as computers, communications, sensors and precision fires and their exploitation to bring to bear maximum combat power at the right time and the right place. NCW uses information for the benefit of the soldiers in peace and in war. The military calls it “situational awareness” which implies awareness regarding terrain [including objectives/targets], weather, enemy, and own forces. This information is passed from the sensors deployed on the ground, at sea, in the air and in space [satellites, unmanned aerial vehicles, aircraft, radars etc] through broadband digital communication networks to front line units and the decision makers in the rear in real/near real time frame thus making the battlefield transparent and reducing the response time.

Military literature in the US describes network centric operations (NCO) as high tempo, precise, agile style of manoeuvre warfare focused on Effects Based Operations [EBO] that derive their power from robust networking of geographically separated entities. EBO themselves are coordinated sets of actions directed at shaping the behaviour of friends, foes and neutrals in peace, crises and war. This implies timely, appropriate and skillful use of all or selected element[s] of national power which include political/diplomatic, economic, technological, social, psychological, information/media and military among others. The final aim is to achieve strategic [political] objectives of war with the least amount of tactical effort which incidentally is also the essence of “Operational Art”. Hence “jointness” and “integration” together with innovative Operational Art are vital ingredients of this type of warfare.¹⁷

The four fundamental requirements [capabilities] for conducting NCO are Networked Communications, Information Sharing , Advanced Information Technologies such as Decision Support Algorithms etc. and Networked Enabled Platforms [vehicles, tanks, ships, aircrafts and other weapon systems].

So what is the status of Indian armed forces as far as this IT generated RMA is concerned? Are we close to achieving the desired capabilities or is it only on our wish list currently? The fact remains that the Indian armed forces are neither integrated nor do they possess these capabilities, regardless of some “stand alone” capabilities existing within each service. Our desire to acquire NCW capabilities, in the first stage, is laudable, but if we wish to move along the path of an Indian RMA, our promises must be backed by agencies and agents for implementation. The military instrument of NCW will have to be forged on suitably joint/ integrated organisations, new technologies, seamless communication networks, joint operational concepts, doctrines, and training and jointly evolved procurement/manufacture of all important weapons and other systems and attitudinal change on part of the leadership to accommodate the new RMA and to substantially improve the skills of all ranks for the type of warfare envisaged. We are continuing to develop and plan exclusively (single service planning), still aspiring to induct high technology systems of the future from Russia, France, USA, Israel or UK in the “stand alone” mode in each service without seriously examining their interoperability and suitability as network platforms and without proper fusion of systems both inter and intra-service into a system of systems so as to derive full benefits of the synergy so acquired.

Technology

Indian armed forces are facing an entirely new technology era, generated through advancements in the field of miniturisation, digitization, material science, biotechnology, sensor technology, stealth, communications and information technology. India needs to integrate new technologies as warfighting systems for which the requirement is to simultaneously evolve a new joint warfighting doctrine and concepts of joint warfighting and then decide upon the weapons and other systems to suit the former. Employment of joint/integrated task forces in the future would require, in

the first instance, introduction of three critical technologies namely: Long Range Precision Firepower; Integrative Technologies (C4I2); and Intelligence, Surveillance and Reconnaissance [ISR].¹⁸ In acquiring the above systems and technologies our progress is extremely slow. We need to take advantage of our new found friendship with the US and the western world to acquire hardware and technologies from abroad if our own scientists cannot develop them.

Nine Steps to Achieving Transformation


Military analysts have established that RMAs of all kinds, of any magnitude, and in any period are likely to share a common structure with common structural -functional dynamics. *Colin S Gray* in his seminal work on RMAs in “Strategy for Chaos” explains nine steps in the RMA process which could assist the Indian Armed Forces in their NCW project.

- Step 1 - “Preparation”, implies that RMAs occur following lengthy periods of reform and extensive preparatory work is necessary.
- Step 2 - “Recognition of Challenge” explains that RMAs occur for a wide variety of reasons judged important. They are a manifestation of radical political – strategic reorientation which in our case was provided by the Kargil conflict and Operation Parakram.
- Step 3 – “Parentage” in that RMAs to be successful require political clout or the patronage of those with political clout. A case in point is of the information - led RMA of 1990s in the US where Andrew W Marshall was the intellectual parent and patron who was keenly supported by the Secretary of Defence William J Perry and Vice Chairman of the Joint Chiefs of Staff, William A Owens.

- Step 4 - "Enabling Spark" implies that an RMA like NCW has to be constructed by revolutionary effort and for this a vital "enabling spark" is needed which may be individuals or a vital invention.
- Step 5 - "Strategic Moment" spells out that RMAs typically contain a Strategic Moment which reveals, as in a flash of brilliance, new and exciting strategic possibilities. Such moments by themselves may not be the main event but they provide the hint of what may be feasible.
- Step 6 - "Institutional Agency" explains the need for RMAs to have agencies and agents for implementation. These include appropriate military organisations and with suitable military cultures, joint doctrines and innovative operational concepts derived through "Operational Art" and intensive training.
- Step 7 - "Instrument" describes that not only do the RMAs have to be conceived and forged but their military instruments also have to be procured. Regardless of the potency of the military instrument it has to be of a size which is appropriate for executing operational concepts in the Indian context.
- Step 8 - "Execution and Evolving Maturity" clarifies that the only test that really counts, in the pragmatic world of strategy, is the detailed consequences of the use of the RMA i.e. its trial by combat. This step essentially refers to the military and strategic effectiveness achieved by implementing the RMA.
- Step 9 - "Feedback and Adjustment" must have the potential of fuelling a complete renewal of the RMA cycle.¹⁹

The nine steps explained above are just an analytical tool and could be termed as a conceptual tool kit for understanding an RMA process such as the NCW. It needs reiterating that this phenomenon, involves much more than mere networked communications. In fact it involves a totality of systems which can be abbreviated as C4I2SR [command, control, communications, computer, intelligence, interoperability, surveillance and reconnaissance]. Armed forces would do well to study this phenomenon carefully and conduct the developmental process through tri-service integrated enquiry, research and analysis to arrive at contextual frameworks and structures for NCW. A brief and objective survey will highlight the weaknesses in each step of the structural dynamics in the Indian context.

Conclusion

The change and transformation in Indian armed forces will require fundamental attitudinal change on the part of the military to accept and absorb the changes and to educate the political leadership so that they become stakeholders along with the military in the transformation process. The nature of wars in the future is going to compel us to think big but with smaller, more maneuverable, more precise and more agile forces. The appointment of a Chief of Defence Staff to coordinate and propel the transformation process forward at the highest levels has now become a greater necessity. 

Notes

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- 7 Michael G Vickers & Robert C Martinage, n 6, pp. 27-28.
- 8 At http://en.wikipedia.org/wiki/Battlespace_Awareness.
- 9 Exclusive interview DGIS, SPs Land Forces 4 of 2008.
- 10 Elinor C. Sloan, n 4, pp. 9.
- 11 Lt. General (Retd) V. K. Kapoor, n 2, pp. 27-29.
- 12 'William S. Lind, Understanding Fourth Generation Wars' at <http://www.antiwar.com/lind/index>.
- 13 Lt. General (Retd) V. K. Kapoor, n. 2.
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- 16 Elinor C. Sloan, n 4, pp. 15-16.
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RMA: A Selective Monographic Overview

*S. G. Inamdar**

'Revolutions in military affairs' and 'RMA'

Two issues need to be addressed before getting on with the main discussion: the first is a necessary clarification on 'RMA' with regard to its difference from just any revolution in military affairs, old or new. The second is a disclaimer with regard to excerpted material.

It is noticed that the general expression 'revolutions in military affairs' has been loosely used by many writers and speakers of late to describe all such goods and practices, the introduction of which by itself impacts war decisively or significantly. These goods include radically new military hardware items like 'stirrups', 'body armour', 'gun powder', 'petard', 'catapult', 'telescope', 'steam traction', 'IC engine', 'submersible', 'chemical weapons', 'aircraft', 'tank', 'radar', 'jet engine', 'atom bomb', 'smart weapons' etc, that got invented in that order. The practices include radically new military strategies, tactics, practices, plans, thinking etc like the Mahabharatan 'Chakra Wyuha', guerilla war, Western drill manoeuvres, Babar's 'Turkiana' manoeuvre, 'outflanking move', 'encirclement', 'pincer move', 'offensive retreat', 'defensive advance', 'the Corps concept', so on and so forth.

Both are spoken of by these writers and speakers as having '*revolutionised*' warfare at specific points of time in military history. And they are right,

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too! They have used this general expression to imply, in short, a fundamental transformation in military affairs that stemmed from profound changes that occurred either in the technology used, doctrine followed or in the organization of the armies and navies of the time. That is as accurate and profound an observation as there can be when speaking about a military revolution, or, as a matter of fact, any revolution.

The common refrain and salient point of each of these so called '*revolutions*' is that they did fundamentally affect, and often replace, existing war-fighting practices at each point in recorded history, changing outcomes of past battles. The opponent had no answer to the element of surprise and degree of devastation that each of these changes brought with it.

In the 20th Century, these changes were represented by three major military developments, in that chronological order: the first was mechanized warfare, submarine warfare and air warfare; the second was nuclear weapons, ballistic missiles and EW; the third was cybernetics & information technology. As my analysis would subsequently attempt to bring out, it is this third military development which is at the heart of 'RMA' in the sense this word is formally understood today.

The essence of the so called earlier '*revolutions*' has seldom been the invention of new technology, *per se*. It is the discovery of innovative ways to organize, operate and employ that new technology which yield measurable gains in time, efficacy and costs. This development is brought about when a nation's techno-military establishment seizes the opportunity to bring in a change to achieve decisive military results in fundamentally new ways. The '*Blitzkrieg*' concept of the Third Reich, making coordinated and concentrated use of air power, tracked vehicles and massed artillery in WW 2, is a brilliant case in point. That it was aided and abetted handsomely by the initial '*Sitzkrieg*' policy of Great Britain is a different matter

altogether and much has already been said and written on both! In retrospect, '*Sitzkrieg*' could rightly be termed as a military revolution in the reverse order!

While all these developments in the past indeed did—many such developments at present do and many in the future will—revolutionise warfare, terming them as 'RMA' would be somewhat misplaced in the strictest technical sense. Any and every new development in the military sphere, past or present, no matter how revolutionary in nature, application and impact, can not be termed as 'RMA'. The acronym 'RMA' in today's context has an altogether different and very specific technical connotation to the point that it may, grammatically, be treated as a proper noun.

It is this RMA that is the theme of this article which endeavours to take a selective monographic overview of the subject, as discussed below.

The disclaimer pertains to the original authorship or otherwise of this dissertation. All of the italicized text and some of the itemized formulations have appeared earlier in some form or the other in various books and journals on military affairs and in the official, public-domain publications of some air forces, including the IAF. These have been excerpted here verbatim to either buttress an argument or to amplify a point. To that extent, this article is more of an anthology than an original paper.

Genesis of RMA

RMA, as it is currently understood, is distinct from the many *revolutionary military developments* mentioned above. It has its origins in an earlier term, *Military Technology Revolution (MTR)* coined by Soviet military thinkers in the late 60's. They began by identifying two periods of fundamental military change in the 20th century: the first driven by aircraft,

motor vehicles and chemical warfare and the second driven by nuclear weapons, guided missiles and computers. They predicted that the next MTR would involve microelectronics, sensors, precision guidance, automated control and directed energy. They defined the holistic concept of RMA as: “*a discontinuous increase in military capability and effectiveness arising from simultaneous and mutually supportive change in technology, systems, operational methods and military organizations.*” RMA today has come to represent, expressly and only, *such changes in which information age technology is combined with appropriate doctrine and training to allow a small but very advanced military to protect national interests with unprecedented efficiency.* To accomplish this RMA, rather than get bogged down in its theoretical verbiage, it is essential to continuously debate, redefine and fine-tune strategy implications, core assumptions and normative choices. This alone will ensure a constantly clear understanding of and focus on the subject.

Historically, most such revolutions were understood only *after* they had taken place, by taking one of the three available approaches. The first approach saw revolutionary technology itself as the main driver of change. The second saw it as revolutionary adaptation of an existing technology. The third saw it as the revolutionary impact of geo-political and technological changes on the outcome of military conflicts. However, in the present context, RMA has to be understood *prospectively*, looking at changes that will be brought on by the following four features of present and future warfare: -

- *Extreme precision and long distance stand-off strikes*
- *Dramatically improved Command, Control and Intelligence processes*
- *Information warfare; and*
- *Non-lethal weaponry*

Each of these four features is fairly self-explanatory at least for a prima facie understanding by any student of military affairs. If one also has technical working knowledge of their considerable potential and is already dealing/ familiar with their present capability, it will be relatively easy to grasp their essentials. For their fuller understanding, however, these can and must be made the subject of deep, independent further study. On that foreground, these features are not being delved into any deeper at this stage and we will go on to the next part i.e. the aim and strategy of the RMA.

RMA: Aim & Strategy

The aim of pursuing the RMA would be two-fold: one, to enable the military to strike anywhere with weight, volume, precision and relative safety, and two, to electronically confuse the enemy into submission with little of warfare's normal collateral destruction. Information age technology, if intelligently combined with appropriate doctrine and training, would allow small but advanced armed forces to operate with unprecedented efficiency. The recent Gulf wars and the US invasion of Iraq *began to suggest* that a historical RMA was underway in USA which might offer solutions to many of the earlier strategic conundrums and dilemmas faced by the US armed forces; other modern armed forces would be similarly placed, albeit with understandable differences of degree.

What is 'Strategy'? It is many things at once but, in the main, it is about preferences, about value judgments, about not just the type of world that is *attainable* but also the type that is *preferable*. Pursuit of RMA has to be wedded and welded to just such a reference frame in order to be able to militarily deliver more for less, faster, more precisely, more cleanly, in any weather, anywhere, by day or night. Bigger and cleaner bangs for the buck, as it were.

Military pre-eminence without an appropriate strategy to shape and utilize

it is both dangerous and fleeting. Crafting of such a strategy for the RMA is more difficult than simply developing and using technology. The Toffler husband-wife duo have rightly said: *“A military revolution in the fullest sense occurs only when a new civilization arises to challenge the old. When an entire society transforms itself; forcing its armed forces to change at every level simultaneously – from technology and culture to organization, strategy, tactics, training, doctrine, and logistics. When this happens, relationships of the military with the economy and society get transformed and the concept of military balance of power stands to be shattered.”*

It is said that in the strict & classical sense, there have been only two military revolutions to date: the rise of organised, agricultural society on the one hand and the industrial revolution, on the other. More generally speaking, *a military revolution occurs, when the application of new technologies to military systems combines with innovative operational concepts and organizational adaptation, in a way that fundamentally alters character and conduct of war. It does so by producing a dramatic increase in the combat potential and military effectiveness of armed forces.*

Stages of the RMA

The current RMA will probably have at least two stages. The present stage is based on stand-off platforms, stealth, precision, information dominance, improved communications, computers, GPS, digitization, smart weapons and jointness. The second stage, somewhat in the future, may be based on robotics, non-lethality, psycho-technology, cyber-defence, nano-technology, brilliant weapon systems, hyper-flexible organizations and fire-ant warfare. Going by this definition, the world seems to be only at the beginning of the current RMA. Once again, each of these terms, while self-explanatory to a point to most general readers, would greatly facilitate

better understanding by a deeper examination by technology buffs, serious students of military science and researchers, if only to be au fait with all the nuances and technical details. Such a study is strongly recommended.

The Pursuit of Present RMA: Pros and Cons

Given the large futuristic content of the RMA, including both hardware and doctrine, with the attendant timeframe and expenditure factors, a case can be made out that costs and risks of its vigorous pursuit could end up outweighing the benefits projected today. It can also be seriously doubted whether the current RMA will generate the expected increase in combat effectiveness for sure, since one does not know for certain the exact kind of opponent(s) that one may be pitted against in a future conflict. Will the RMA dividend deliver the promised ROI - return on investment? Valid fears, which cannot possibly be allayed comprehensively, conclusively or empirically, using data, know-what, know-why and know-how available today. It can at best be only an intelligent, informed guess.

However, arguing *for* such a pursuit of RMA, one can state the following reasons to justify medium and long range investments: -

- *It will bring a significant increase in combat effectiveness against one's immediate and medium distance opponents.*
- *A capability built around precision standoff weapons and disruptive information warfare, would be more politically usable than the traditional force projection capability.*
- *It can augment the existing deterrence.*
- We may simply slide into unrecoverable strategic inferiority, if not oblivion, if we miss the RMA bus, in the manner we managed to miss the Agricultural and Industrial Revolutions of the 17th and 18th centuries, respectively. If we board it, we will be right; if we do not, we will be left.

Pursuit of RMA would result in strategy, rather than technological capability, guiding force development. The key question that we would then need to answer is *What exactly do we want the future military to be able to do?* The answer would depend entirely on the national strategic objectives, prognostic-able developments in the neighbourhood (and beyond) and the likely future opponent(s).

RMA Pursuit Options

If India chooses to pursue the RMA objective, there would be three broad options: -

- *Push forward vigorously on precision and stand-off weapons development/acquisition and disruptive information warfare. We already have or will soon have the necessary technology and wherewithal.*
- *Throttle back on the RMA and consolidate existing advantages.*
- *Push the Revolution in a different direction altogether.*

While choosing the first of these options, it would be of crucial importance to first arrive at (and enunciate) a precise strategy norm for the country. The national political leadership will need to be very clear about (and decide) not only what it *can* do with a vastly more effective military, but also what it *should* do with it. It is quite meaningless to merely *know* what you are capable of doing unless you also have a clear vision of what you ought to do with that capability. Only then will accomplishing RMA objectives translate to measurable progress instead of only to visible change.

The astronomical investments that would be called for and the colossal work that would need to go into it leave little room to dither, equivocate, obfuscate or procrastinate on this issue. We may simply have to do what behooves a nation surging forward to Regional/ Super Power status, if not

to take our rightful place ordained by our geo-political preeminence and population size.

RMA: How it Enhances Combat Effectiveness

RMA significantly increases combat effectiveness by spawning four types of changes. These are: -

- *Technological change*
- *Systems development*
- *Operational innovation, and*
- *Organizational adaptation.*

These four changes are simultaneous and mutually supportive. Together, these get the RMA to impact the business end of the application of military force in four different ways.

Firstly, there will be an alteration in the relationship between accuracy and distance, irrespective of the Service involved. Traditionally, accuracy has diminished with distance. However, technology has progressively and significantly changed all this by extending the distance at which fire could still be very accurate. The invention of the compound bow, rifling of guns both small and big, recoil mechanisms, strategic bombing, close air support and guided missiles are but examples of the very measurable difference technology has made in this regard, over the centuries.

To some extent, accuracy still degrades with distance but emerging technology has made long distance stand-off strikes increasingly precise. Stealth and long-distance precision strikes will undoubtedly become the dominant dimension of air power applications, with sub-metre accuracies, even at inter-theatre distances rapidly entering the realm of possibility. Having said that, it must be admitted that in reality, such conventional

strikes, however complex they may be to orchestrate, are the least radical dimension of the current RMA. That credit goes to information warfare.

Secondly, therefore, what comes to the fore is the ascendancy of information warfare which possibly represents the greatest departure yet from conservative military ethos and tradition. Information has always been a vital part of war, whether in the form of intelligence or psychological operations. Technology will increasingly impact C4ISR area of warfare hugely (it is already doing so) while altering the traditional relationship between operational complexity and effective command and control. Electronic and space-based methods for acquiring, analyzing and disseminating information, while these will no doubt make military activity much more complex than it is today, will confer a hitherto unimaginable upgrade with regard to timeliness, synchronization and controllability of combat at sea, on land and in the air.

Information has graduated from being more than just a handmaiden of operational control: it is now a strategic asset which is both crucial and discrete. This is a seminal change, reflecting the Toffler contention that information is becoming the basis of economic strength, especially in what the Tofflers call the '*Third Wave*' states. According to Alvin & Heidi Toffler, during the '*First Wave*' of human development, production was primarily agricultural, so war sought to *seize and hold territory*. During the '*Second Wave*', industrial production dominated, so war was often a struggle of attrition where belligerents wore down each other's *capacity to feed, clothe and equip armies*. '*Third Wave*' warfare in the present context will seek to erode or destroy the *enemy's means of collecting, storing, processing and disseminating information*. But closer home, no matter which cutting edge technology is employed, for most nations - like India - information warfare is likely to serve only as an adjunct to conventional strikes, more as a force multiplier than as a stand-alone method of warfare, at least for the next ten years or so.

Thirdly, there will be a reduction in both, casualties and collateral damage, usually associated with military combat operations. While ultra-precision conventional strikes will no doubt play a role in this, the more radical change will be the use of non-lethal weapons or the so-called '*Weapons of Mass Protection*' or, *WMP*. These would be electro-magnetic, kinetic or non-lethal chemical devices that can be used in the initial stages of a conflict to deter by denial. The aim would be to support diplomacy, to limit enemy aggression, to non-lethally disarm or dissuade him. *WMP* will also destroy his lethal capability with minimum damage to his non-combatants and the environment. Examples of such weapons are acoustic-mass sound frequency bursts, laser beams, hi-power microwaves, power-grid short circuiting tapes, non-nuclear electro-magnetic pulses, hi-power jamming, obscurants, foams, slicks, super-caustics, magneto-hydrodynamics, information warfare and soldier protection. Non-lethal weapons would seem to have the greatest applicability in conflicts that are just short of an all out war.

Fourthly, and possibly most importantly, *RMA* will catalyse a rejuvenation of the political utility of military power. Due to instantaneous global communications, the pervasiveness of the electronic media and the increasingly low national tolerance for casualties (read 'body bags'), military force, as we have known it, will become less and less usable. *If intolerance of war casualties becomes a key national factor, non-lethal weapons may be just the solution. These weapons would allow the world community to intervene earlier on in a crisis when a solution is more attainable or, at least, attainable at a much lower cost. Falling somewhere between a show of force and conventional military intervention, disabling non-lethal weapons would either provide the necessary deterrent before the crisis develops or could defuse a crisis before it implodes.*

Types of *RMA*

There is the minor *RMA* and there is the major *RMA*. A minor *RMA* tends

to be initiated by individual technological or social change. This occurs in relatively short periods (less than a decade) and has its greatest direct impact at the micro-level, i.e., on the battlefield.

A major RMA is the result of combined multiple technological, economic, social, cultural and/or military changes and usually occurs over relatively long periods (about half a century) and directly impacts the macro-level i.e. national strategy.

While a minor RMA can be deliberately shaped and controlled, a major RMA cannot be. One example of a minor RMA underway is military applications of the silicon chip. The next minor RMA could well be driven by robotics and psycho-technology (thought impulse commands).

In the future, minor RMA will increasingly occur closer together than in the past, almost to the point of seeming like a continuum of revolution. Such a continuous revolution will mark the beginning of a major RMA that will result from the interplay of multiple economic, social and cultural changes driven by the silicon-chip, robotics and psycho/bio/nano-technologies.

RMA Aspects of Warfare

Information Superiority. Information superiority comes from successful integration of offensive and defensive information operations. These are intelligence, surveillance, reconnaissance and other information-related activities that provide timely, accurate and relevant information. It also comprises command, control, communications and computer activities that leverage friendly information systems. Improved intelligence collection and assessment as well as modern information processing, command and control capabilities, are at the heart of the current RMA. With the support of an advanced common C4ISR backbone, it will be

possible to respond rapidly to any conflict. Forces operating in close concert will be able to achieve a state of information superiority in near real-time that will be pervasive across the full spectrum of military operations, enabling them to dominate the conflict situation.

An announced prognosis of the six principal components of the evolving C4ISR architecture, for the period 2010 to 2020, is:

- *A ruggedised, multi-sensor information grid which will provide high fidelity situation pictures of the battle zone on a continuous basis.*
- *A joint Army-Navy-Air Force communications network capable of real-time transmission of information to and from concerned Commanders with the necessary resilience and network management capability.*
- *Advanced command and control mechanisms and processes that allow employment and sustenance of globally deployed forces faster and more flexibly than what the adversaries have.*
- *A sensor-to-shooter grid to enable widely dispersed joint forces to engage in coordinated targeting, cooperative engagement, integrated air defense, rapid battle damage assessment and quick follow-up strikes.*
- *An info security system to protect widely distributed sensors, communications and processing networks from interference or exploitation by an adversary.*
- *An info warfare capability to either penetrate, manipulate or deny battle-space awareness to the enemy, on one hand, and to make unimpeded use of his own assets, on the other.*

Dominant Manoeuvre. The aim of any military commander is to force the enemy to either react from a position of continuous disadvantage or capitulate in pockets or even centrally. The key theme in a Dominant

Manoeuvre is decisive application of force, overwhelming if necessary, at critical points, in order to achieve operational objectives in the shortest time and with minimum losses. This is sought to be achieved by such use of mobility, selective enemy contact and information as would enable joint forces, even if spread over a wide frontage or even if dispersed in contiguous theatres, to bring to bear decisive pressure upon the enemy's carefully identified centres of gravity. Flexible and responsive logistics are crucial to this concept and the seeming overkill occasionally, resulting from the use of overwhelming force, will need to be accepted; it may even turn out to be economical when computing the eventual gains.

Precision Engagement. Precision engagement bestows the ability to find, fix, track and precisely target any military objective, far or near. The concept works as a firepower force-multiplier and is an invaluable asset when either fighting in urban populated centres or when it hot pursuit across thickly populated areas. It includes achieving precise effects in cyberspace, accurate and timely deliveries of humanitarian relief supplies, providing medical treatment to populations and directing psychological operations for maximum benefit.

Full-Dimensional Protection. Protection must be provided across the board, both in war and in peace and at all levels of conflict. The initial fears in Vietnam and the first Gulf War that it would 'soften' the soldier and/or impede his mobility (a la the panoplied cavalry of yore), soon seemed to be quite baseless and, in the event, did prove to be entirely so. Achieving this goal requires a joint command and control architecture that is built upon information superiority and employs a full array of active and passive measures at many levels and in many segments. Full-dimensional protection bestows on forces freedom of action, freedom from attack and freedom to attack. This leads to lowering what is termed as the psychological 'Operational Degradation Factor' (ODF) to its lowest achievable levels, thus yielding an apparent combat capability bonus. New

chemical and biological weapons detectors, improved individual protective gear and greater emphasis on collective protection are all critical issues. Full-dimensional protection includes defence against asymmetric attacks on information systems, infrastructure and other sensitive areas vulnerable to non-traditional means of attack or disruption.

Focused Logistics. This is the end product when you successfully blend information superiority and technological innovations in order to develop state-of-the-art logistics practices and doctrine to support a multi directional and multi theatre war. A hundred percent on-line, multi access inventory management is at the very heart of Focused Logistics. These will produce the logistics footprint necessary to support and sustain more agile combat forces that can be rapidly projected around the globe, with the smallest unit level inventory and shortest supply lines.

Culmination Points of RMA

RMA has culmination points at which innovation and change either would slow down or stop altogether. This may occur when political or military leaders become satisfied with the military balance obtaining and will be loath to risk radical change. It may also occur when costs of change are seen to outweigh the benefits of expenditure yet to be incurred. At such a point of culmination, states that have adopted the RMA would seek to consolidate their advantage. Further improvements in military effectiveness, thereafter, must and can come primarily through superior training and intelligence.

The Indian Context

Our national leadership and strategists attempting to pursue and master the current RMA, would face the following key decisions:

- Should the RMA be pursued at all?
- What is the appropriate pace of change?
- Which path of change should be taken?
- How can the culmination point of the revolution be recognized and what should be done when it is reached?
- How can increased combat effectiveness be translated into strategic gain?

Why should India actively pursue the current RMA? For five good reasons:

- It can significantly enhance our combat effectiveness in the immediate neighbourhood.
- A military force built around stand-off and precision weapons and disruptive information warfare capability would, because of markedly decreased enemy civilian casualties and reduced collateral damage, be more politically employable than our traditional sledgehammer military.
- By thus removing some of the fetters on the use of military power, the RMA could augment our non-nuclear deterrents.
- We need to pursue the current RMA if only to avoid sliding first into, strategic inferiority and then into strategic oblivion. What we will do well to remember here is that technological development is relatively the easy part of a RMA; reshaping attitudes and adapting organizations, indoctrinating, educating and training can be extraordinarily difficult and can take eons to accomplish.
- With credible evidence of China pursuing the current RMA fairly actively and Pakistan stirring to look in that direction, India with her very significant and cutting-edge IT advantage, would be committing military hara-kiri if she did not plunge headlong into the RMA and stayed ahead at least of her neighbours.

The threats expected in the next two decades will have a major effect on our force development. At one end would be a peer rival or perhaps a coalition of competitors organised along a hi-technology RMA alliance. Next would be regional aggressors with large but less developed military forces. Pakistan and China already have weapons of mass destruction deliverable via ballistic or cruise missiles. They also have or would shortly have some hi-tech capabilities such as the ability to wage limited space operations and information warfare.

Next on the spectrum would be our internal threats such as the Jihadi, naxalite and externally funded terrorists. Some of these will remain primitive and rely on the traditional guerrilla tools of small arms, RPGs, mortars, mines and IEDs, while many will have adopted fair amount of technology. The final pole of the spectrum will include externally funded criminal organizations, some using traditional methods of violence while the others resort to economic subversion, ecological terrorism or information warfare. We will confront some or all of these types of enemies in the coming decades, to be sure.

An RMA Organization for India

So long as they are part of a conventional institution, the armed forces for example, personnel are constrained in their creativity. A new, autonomous RMA organization composed of *analysts* rather than *advocates* can predictably do what the RAND Corporation did for nuclear strategy in the US in the 1950s. While remaining affiliated to the Ministry of Defence, this RMA organization should be staffed by a mix of civilians, armed forces officers on short deputations and armed forces officers (both serving as well as retired) who will spend the remainder of their career in the development and implementation of the RMA.

RMA and the Indian Air Force

The Air Force's vision of air and space warfare, through 2020, calls for *“developing core competencies built on a foundation of quality personnel and integrated by battle-space awareness and advanced command and control. A favourable air and space situation or superiority will allow us freedom from attack and freedom to attack, while the Air Force's ability to attack rapidly anywhere in the region will continue to be decisive. Rapid intra- and inter-theatre mobility and multi-role aircraft will help us respond quickly and effectively to unexpected challenges.*

Precision engagement will enable the Air Force to reliably apply selective force against specific targets simultaneously to achieve desired effects with minimal risk and collateral damage.

Information superiority will allow the Air Force to gain and exploit information, defend own and attack enemy's information systems while denying him the ability to do the same to us.”

Pursuit of a genuine RMA lies at the heart of the crucial need to prepare today, for an uncertain tomorrow. It also has not-so-subliminal an air power content. As air forces and navies the world over see it, 'RMA' could well be termed as a *'Revolution in Military Aviation'*. If long reach, rapid response, speedy advance and quick results are the heart of the military matter in a fast and decisive engagement, military aviation, irrespective of which Service is called upon to meet that need, would seem to be the more appropriate repository and tool of the RMA!

Conclusion

An RMA is recognized and nurtured typically by those armed forces that

tolerate and at the right time, empower the visionaries in their rank-and-file to do the needful. The decision to do so marks a vital juncture in an RMA. Such a juncture cannot be legislated or ordered: it has to naturally *germinate* from the structure, culture and psyche of the armed forces as well as the nation as a whole. For that to occur in India, some ground work is in order to create the necessary pre-conditions.

Firstly: we need to realise that *Training* alone won't hoist us to that state; we would also increasingly need to *Educate* our men & women in uniform, for training tells you '*How*' and '*What*' to do while education tells you '*Why*'. And that alone is suitable ground for the *germination* of visionaries. Secondly: we need to get our Air, Flag and General Officers (such of them who do) to stop working and thinking like Flight, Ship and Company Commanders. This has often been the biggest brake on individual creativity and the biggest dampener on cerebral fertility in our middle and junior level military leadership.

Thirdly: individuality, out-of-the-box thinking and informed dissent must be substantively nurtured (and not merely mouthed as platitudes) without tossing basic military discipline out the window. Having said that, a word of caution may be in order here: '*tolerating eccentricity is not the same as cultivating vision*', to quote Voltaire.

Unless we usher in these preconditions, the juncture that was mentioned above will not occur. A major impediment here could be our deep seated, straitjacket concept of military discipline rooted in the Victorian era. While we cannot and also must not, jettison it overnight and mindlessly, we would need to honestly and boldly apply our mind to redefining and recasting it to bring about a smooth transition to serve the needs of RMA driven armed forces. That history is replete with examples of true and genuine leaders and motivators of men, in uniform and outside it, who,

with some exceptions, seldom needed iron discipline to lead their charges successfully in war and in peace, may be good food for thought.

In the end, a sobering thought: any aviator, and I am no exception, no matter how far, high and fast he flies, needs and likes to come down-and-back to mother Earth at the end of that lofty flight, if only to achieve that ideal aviation equilibrium: an exactly equal number of landings and take offs chalked up against one's name! Actually, even Astronauts and Cosmonauts crave for the same. The central issue here is mother Earth, *terra firma*, ground, terrain, land.

Why I mention this before signing off is that, after all the RMA dust has settled and the technology brouhaha has died down, you would still need the good old infantry soldier to march/ drive/ crawl/ swim/ run/ climb/ Para-jump etc to come in, mop up and occupy real estate! No curtain has ever come down on any claimed war or battle victory without that final act of physical occupation taking place. There's no getting away from that hard, 'earthy' fact of military life, computers or no computers! *idsa*

Indian Army: Vision 2020

*Ali Ahmed**

Kanwal, G., *Indian Army: Vision 2020*, New Delhi, Harper Collins, 2008, pp. 342, Rs. 495/-, ISBN 13: 978-81-7223-732-5

The author is a retired brigadier with a distinguished record in service. More significant is the mark he has made even while in service through his writings on security matters. His earlier stint in the IDSA as a research fellow on sabbatical from the service had resulted in a well received book '*Nuclear Defence: Shaping the Arsenal*' (2001). Having been in the elite military operations directorate and in the doctrine section of the HQ IDS (Integrated Defence Staff), he has brought to bear his intimate experience with the military aspect of security to his current work. However, since his conception of India's nuclear doctrine, explicated in the book under review, is critical to his argument for a muscular military and strategic posture made in the book, it requires extended interrogation.

Brigadier Kanwal writes that any alternatives to 'massive retaliation', such as 'proportionate response', would dilute India's 'massive retaliation' based deterrence. That the Brigadier has read the official press release on the nuclear doctrine of the Cabinet Committee on Security of 4th January 2003 is evident from his statement: "India's nuclear deterrence is based on launching massive punitive retaliation to a nuclear first strike and any talk of a graduated response would undermine its efficacy". He has registered the term 'first strike', but has not registered the implication. According to the adopted nuclear doctrine 'massive retaliation' is only against '*first*

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strike' and *not 'first use'* that does not amount to a 'first strike', implying that 'flexible response' is not ruled out. He argues against any move away from reflexive massive retaliation, which he mistakes for India's current position – which it is not - to 'graduated response', to which it has possibly already moved.

A recapitulation of the relevant portion of the press release is in order: “(ii) A posture of “No First Use”: nuclear weapons will only be used in retaliation against a nuclear attack on Indian territory or on Indian forces anywhere; (iii) Nuclear retaliation to a *first strike* will be massive and designed to inflict unacceptable damage.” (Italics added). Clearly, there has been a move away from the formulation of the draft nuclear doctrine (DND) of August 1999 which read: “(a) any threat of use of nuclear weapons against India shall invoke measures to counter the threat: and (b) any nuclear attack on India and its forces shall result in punitive retaliation with nuclear weapons to inflict damage unacceptable to the aggressor.” Interestingly the term 'massive' does not appear in the DND.

India's doctrine is thus an evolved one. It can be said to be *assured nuclear retaliation* to an adversary's nuclear use which could be of the order of massive retaliation as response to a 'first strike'. Massive retaliation against a sub 'first strike' level nuclear use by the adversary would lack proportionality, be subject to self-deterrence, would lose the peace and on these counts would neither be rational nor credible. Therefore, flexible response is apparently not ruled out. This change has neither been noticed nor found mention in strategic literature, and therefore, the author cannot be entirely faulted for missing it.


It is important to first interrogate the understanding of the nuclear doctrine of the author since it under grids his argument for 'strike hard – strike deep' conventional operations. He recommends “massive punitive retaliation with the full force of India's nuclear capability” to any Pakistani nuclear

strike. The author's concept of offensive conventional operations requires an aggressive nuclear posture in order to stay Pakistan's nuclear hand. In the nuclear age this is not sustainable logically since nuclear cards should dictate the manner of conduct of conventional operations and not vice versa.

He notes the prerequisite for a nuclear doctrine is a strong political will. He also notes that 'Indian political leaders have failed to exhibit the type of resolve necessary'. If the required resolve is already in deficit, it begs the question as to why pitch for a doctrine for which there is self-confessedly little capability to follow through with. Just to operation a nuclear doctrine a nation should not be required to change its political system, processes and attitudes. Again logically the political systems and practices should dictate the kind of nuclear posture adopted and not the other way round.

He rejects General Sundarji's 'quid pro quo' and 'quid pro quo plus' response concepts stating, "After over a decade of Pakistan's proxy war and particularly after Kargil, the national mood is much different. Indian public opinion will accept nothing short of final dismemberment of Pakistan.", even if the nuclear Rubicon is crossed by Pakistan in a counter force mode under severe Indian military provocation! Firstly, elevating public opinion to becoming a determining parameter for nuclear response is a unique argument to make and the author would do well to elaborate on it for informed discussion. Secondly, the Sundarji options may be an even more viable deterrent cover for the deep thrusts the Brigadier envisages – which is perhaps why the Indian nuclear doctrine has mutated from 'massive retaliation' to countenance 'flexible response' without the change even being noticed.

The author admits that "the book narrowly focuses on operational challenges and looks for ways and means to resolve them". His resolving the challenge in recommending a 'massive retaliation' nuclear doctrine is

problematic. This detracts from the credibility of the conventional doctrine he favours. Thus the downstream recommendations on force structure, firepower resources, force multipliers, equipment acquisitions and forces accretions require reappraisal. His prescription is at its most expansive in his recommendation for raising a mountain strike corps of two divisions each, for each front. In his current position as head of the Army's Centre for Land Warfare Studies, he is in a position to propagate the ideas raised in his Vision for the Army. But prior to doing so revisiting the issue of nuclear doctrine raised here may be useful. 

Indo - African Defence Cooperation: Need For Enhanced Thrust

*Arvind Dutta**

General

The African Continent, rich in minerals and other natural resources, has been figuring prominently in the world affairs in the post Cold War era, for a variety of reasons. The positive aspects in its recent history relate to its success in getting rid of the colonial yoke as also the vestiges of racialism targeted at its people. The negative facets are epitomised by the numerous internecine conflicts among the people as also the pandemics, and the resultant spiral of violence, death and misery, which serve as obstacles in its path towards development and progress. Nonetheless, the improvement in the political and economic situation, discovery of vast oil and gas reserves and the ongoing restructuring of many African economies has turned the continent into a much sought after destination. Economically emergent India is also better equipped than ever before to exploit its historical linkages and traditional friendship with Africa for mutual benefit. Towards this end, the medium of defence cooperation, especially Army to Army cooperation, should be increasingly used for enhancing the existing political and economic ties. Though a number of training teams have been imparting training to African militaries, however, notwithstanding the progress made so far, a lot more could be done in this sphere.

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Engagement of Africa by Outside Powers

United States. The United States recognises the “evolutionary change the continent is undergoing” and is partnering with Africans to find African solutions to problems related to health care, conflict resolution and good governance. This intent was emphasised during the visit to the African region by President Bush in February 2008. In the six days of his visit, President Bush visited Tanzania, Benin, Ghana, Liberia and Rwanda. Some of the important US –Africa issues are as follows:-

- US currently imports 18% of its oil requirements from Africa. This requirement is likely to rise to 25 percent within the next decade. Algeria and Nigeria, both members of OPEC, and Angola are among the top ten oil suppliers to the US market.
- The United States has provided over \$400 million to the AU for peacekeeping operations in Darfur in the last four years alone. It also aims to augment African Union (AU) peacekeeping capabilities through initiatives like the African Contingency Operations Training and Assistance (ACOTA) program, which involves working with a number of African militaries to build up an AU standby force of 25,000 troops to respond to emergencies.
- To have a more focused approach on security dynamics in Africa; it has decided to establish a new geographic military command for the continent – the US Africa Command (AFRICOM). Despite intensive campaign of consultations on the continent, American efforts to headquarter AFRICOM in Africa have met with resistance.

China. China has primarily invested in Africa in order to secure access to the region's natural resources, to fuel its expanding economy. An important

highlight of the China – Africa burgeoning relationship was the hosting of a China-Africa summit by China in October 2006, which was attended by almost 50 African heads of state and Ministers. China is now active in every part of Africa. Its energy related initiatives are focused on Sudan, Angola and Nigeria. China has pledged to double development assistance to Africa by 2009. Further, it has promised to provide about \$20 billion in infrastructure and trade financing to Africa over the next three years. Having already written off debts of almost \$1.5 billion in Africa, it may oblige them with writing off similar amounts again in future. As far its military engagement with Africa is concerned, following issues merit attention:-

- The PLA now reportedly maintains a growing military presence on the African continent. Estimates range from approximately 1,200 soldiers, including PKO forces, to more than 5,000. Its military-to-military contacts, which extend to three-fourths of African nations, provide an arrangement of military relations from which it can pursue its future initiatives in Africa. Further, it is conducting high-level and technological military cooperation and exchanges, as also training African military personnel.
- China's military-to-military activities in Africa, including Defence Attaché presence, naval ship visits, arms sales and other missions to support military cooperation can be expected to expand to keep pace with China's growing national interests throughout the region.
- An increase in its diplomatic military representation and overall presence may get encouraged indirectly by establishment of the new United States Africa Combatant Command, which may impinge on China's security interests in the region.

Increased Area of Interest of European Nations. The major West European powers, especially Britain and France, have also revived or expanded their links with the nations of Sub-Saharan Africa. European firms represent roughly two-thirds of the total FDI in Africa. More than half of European investment originates from the UK and France, going mainly to countries with which they have historic ties. French oil companies such as Total, locked out of the Middle East due to France's opposition to the Iraq war, have made large investments in Francophone countries such as Cameroon, Chad, and Gabon. The European military aid deliveries and arms sales to Africa are likely to be stepped up as a result of growing commercial engagement. Of 12,000 French troops engaged in peacekeeping operations around the world, nearly half are deployed in Africa in both military and advisory capacities, according to the French Ministry of Defence. There are three main French bases in Africa. The largest is at Djibouti, with smaller forces at Dakar in Senegal and Libreville in Gabon. Their purpose is to promote regional security, though the base in Djibouti allows France to exercise a measure of military influence in the Middle East. (Also in Djibouti are about 1,500 American personnel of the Combined Joint Task Force—Horn of Africa, stationed at the former French base Le Monier since 2003.) There is also a small French force on Reunion Island, a French territory located off the coast of Madagascar.

India - Africa Relations

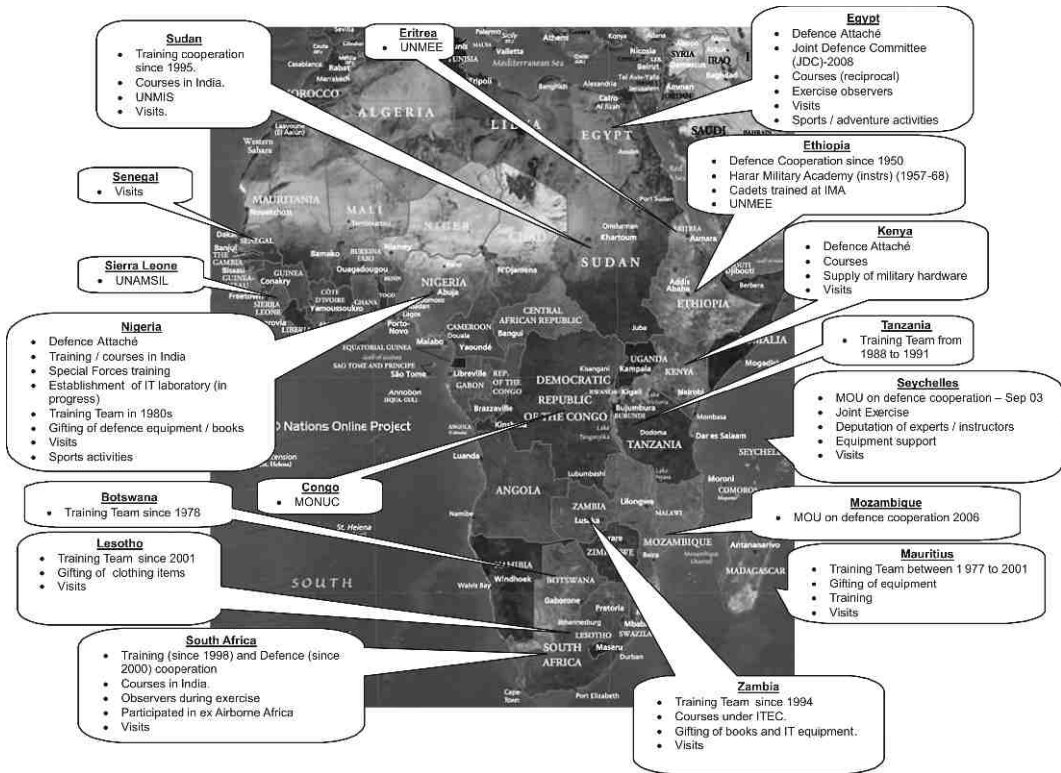
General. India's relations with Africa are conditioned and energised by our historical linkages and strong political foundations of the past. India has, over a period of time, initiated several economic collaboration arrangements with the countries of Africa. These include India's membership of the African Development Bank, assistance under the India's Technical and Economic Cooperation programme, credit arrangements, both through governmental channels and through the Exim Bank of India, and several initiatives within the multilateral G-15 grouping

and the Indian Ocean Rim Association for Regional Cooperation. Africa is the emerging market for Indian products and enterprise and an alternative source of energy security for India.

Military Engagement. India, with the second largest army in the world, has portrayed itself as a responsible stakeholder in the international system and has gainfully employed its military in defence cooperation activities at the global level. As part of its defence cooperation, India has extended training to a large number of African military officers, over the years, in various military institutions. Currently, India has military-to-military cooperation activities, primarily related to the training fields, with almost one-third of the 54 African nations. India, one of the largest contributors to peacekeeping in Africa, has participated in all the UN peacekeeping missions in Africa and currently has sizeable contingents in the Democratic Republic of Congo, Southern Sudan, Ethiopia and Eritrea. Important highlights of the training being pursued presently are as follows:-

- India has deployed military training teams in a number of African countries viz. Botswana, Zambia, Lesotho and Seychelles. Training teams were earlier deployed in Nigeria and Tanzania also. We have our Defence Attaché located in Egypt, Kenya and Nigeria. Further, a number of military-to-military cooperation events are being progressed with other nations as well.
- A significant number of military officers from African countries have been undergoing training courses in India at various levels. Our high standards of training and infrastructural facilities are a major contributing factor for the same. Availability of English speaking officers, among the African armies, to a great extent, facilitates imparting of training to officers. However, training of personnel below the officer's rank is highly constrained due to language problems.

Major Defence Cooperation Activities with African Countries



- India has participated in all UN peacekeeping missions in Africa. As a consequence, Indian army contingents have played an important role in training army personnel in conflict afflicted countries like Congo, Sudan, Mozambique, Rwanda and Angola as part of post conflict peace building. Supply of military hardware to few countries like Kenya and Seychelles; have been undertaken in the past.

Recommended Enhanced Defence Cooperation Profile

A constructive engagement of African countries is in our long term strategic interest. With increased signatures of US and China in Africa, it is prudent that measures are taken to engage African countries more

effectively. It is felt that the tool of military diplomacy should be more viably utilised to further strengthen overall relations between India and African nations. Further, cooperation with countries, those extend strategic spin-offs, must be pursued vigorously. India also needs to adopt a proactive policy of engaging Africa militarily, both the regional groups as also the individual countries. Additionally, building capacity of the African Union forces especially in the fields of logistic management and communication and information systems for which it is largely dependent on external support is considered very important. It is also pertinent that stronger military ties with African nations would provide excellent opportunities to enhance India's influence in this increasingly important region. The engagement with relevant countries needs to be classified based on the strategic importance and the likely spin-offs. Notwithstanding, a gradual and deliberate approach is imperative. The recommended courses of actions are:-

- Enhance levels of military to military engagement with leading countries like South Africa, Nigeria, Angola, Ghana and Kenya through institutionalised defence cooperation mechanism including staff talks, as part of strategic level framework.
- Maintain evenhanded interaction with countries like Seychelles, Lesotho, Egypt and Ethiopia through institutionalised defence cooperation mechanism including staff talks at functional level.
- It is also felt prudent to undertake military-to-military activities with additional countries as well, on case to case based requirements. These activities could be based on the areas of interest evinced by a country or our needs. The prospective areas for military to military cooperation with African countries could devolve on goodwill visits, establishing training infrastructure and placement of additional training teams, where necessitated.

Combined exercises with peacekeeping focus in addition to assistance in development or refinement of doctrine, intelligence and logistics could be considered.

- Cooperation in tackling non-conventional threats – drugs and small arms, English language training and distant education programmes to invite enhanced participation.
- Regarding Maritime Security, India needs to establish a system of regional cooperation with the Indian Ocean littoral countries to combat threats emanating from non-state actors, particularly those related to terrorism, armed robbery and piracy.
- Exploring feasibility of conduct of multilateral defence cooperation events involving select Africa nations, India and US AFRICOM components.
- Supply of military hardware is another area which merits additional impetus.

Conclusion

Today Africa factors more significantly in the security and geostrategic considerations of outside actors than it did before and is fast emerging as one of the most sought after destination for bilateral engagement. Countries like US and China have already taken important lead in engaging Africa. In the interest of long term security and mutual benefit, India, therefore, needs to give a renewed focus for forging stronger relations with African nations and towards this end must step up its defence cooperation initiatives with Africa in a spirit of mutual trust and confidence. 