Jointness in Defence Services: Chief of Defence Staff is a must for the Defence Services

Colonel PK Vasudeva (Retd)

"In order to bring jointness and synergy among the three services of the armed forces, need has been felt to appoint Chief of Defence Staff (CDS) who can have better command and control over the three services for a successful operation and also be a single military adviser to the Prime Minister and Defence Minister. The CDS case has been strongly reiterated by the Parliamentary Committee on Defence and its recommendations should be taken seriously by the government."

Laying bare the claims on the efficacy of joint military commands of the army, navy and air force, the Parliamentary Committee on Defence on 14 October 2007 has commented that there is “no jointness” in these commands. In its report tabled in Parliament, the committee has found that that there still exists a serious lack of synergy between the three services, as was evident during the Kargil conflict.

The Committee visited the Andaman and Nicobar Command and found that the required synergy between the three services was missing. “The Committee understands that the senior officers of the command can issue orders to personnel belonging to their respective forces only. There is no jointness of command and control. The Committee feels that there is a serious lacuna and earnest efforts should be taken to correct it immediately”, the report states.

The Parliamentary Committee has also commented on the Kargil conflict, stating the Chiefs of Staff assumed the role of operational commanders to the respective forces, rather than Chief of the Staff to the Prime Minister and Defence Minister. “This led to a number of negative results and protocol problems,” it says.

The Committee has also reiterated the need for creation of the post of CDS in order to boost synergy among the three services and provide a single point military advice to the Prime Minister and the Defence Minister.

The Committee has reiterated that the government should take the recommendations seriously and take final decision on the CDS at the earliest and, till that was done, the functioning of the Chief of Staff Committee (COSC) should be seriously streamlined and positively made effective.

It has been reported that Chief of Naval Staff, Admiral Sureesh Mehta, took over as Chairman COSC from the outgoing Chairman General JJ Singh on 1 October 2007 after his superannuation from the army. It is customary that the senior most out of the three services chief becomes the Chairman COSC.

CoSC is meant to support the Chairman in the optimum performance of his role and functions, and bring together and coordinate several functions common to three Services. However, it has been proved beyond doubt even during the Kargil war that the Chairman of COSC is a defunct body having no clear cut roles assigned officially.

On 15 August 1947 when India got its independence, the British must surely have been delighted when the independent Indian government decided to retain the British Commander-in-Chief (C-in-C) of the Army, and the British Chiefs of Air and Naval Staff. On 15 January 1949, General K M Cariappa took over from General Sir Roy Bucher as “chief of the army staff and C-in-C, Indian army. He remained C-in-C till 26 January 1950, when the Indian Constitution came into force. As C-in-C he enjoyed number two status next to the Governor General of India.

All the three services chiefs were given independent command of their respective services – army, navy and air force, under the defence minister. They were given the status equivalent to the Cabinet Secretary, which is resented by the defence secretary who happens to be junior to them in the warrant of precedence. The supremacy of the civil rule was maintained and a possibility of a Defence forces commander taking over the country was completely ruled out by the cabinet headed by Jawaharlal Nehru.

However, it has been felt strongly at the higher defence quarters that there is a need to appoint a CDS to control the three services in operations for better command and control under a ‘military adviser’ to the Defence Minister for efficient functioning of the three services. The advance democracies - USA, UK, and EU - have a Joint Chief of the Staff looking after the operations and peace time requirements of all the three services.

On the recommendations of the Subrahmanyam Committee Report on Kargil for the appointment of CDS the Government appointed a Task Force under the former Rajya Raksha Mantri Mr Arun Singh to give its recommendations on defence and security matters. Mr Arun Singh also strongly recommended the formation of CDS on the lines of other world democracies. Finally Group of Ministers under the chairmanship of Mr L K Advani appointed on April 17, 2000 also recommended the appointment of CDS in rotation, but the Defence Secretary was also recommended to be the Principal Secretary.

The CDS structure was created after studying the military establishments of advanced countries with the aim of achieving synergy between the defence forces.

The Government finalised the basic structure of the CDS set-up, which will revamp top defence management. The setting up of a Defence Intelligence Agency (DIA) and the tri-service Andaman and Nicobar Command under a Indian Naval Vice Admiral was also approved. The conceptual framework was more or less complete. The new apex set up will promote joint planning and execution of military affairs.

The CDS will be a four star officer assisted by a Vice Chief of Defence Staff (VCDS) and four Deputy Chiefs of Defence Staff (DCDS), who will all be three star officers from all the three services. The four Deputy Chiefs will look after the functional areas of Operations, Intelligence (DIA set up), Medical and Planning respectively. The Director General of Armed Forces Medical Services is likely to be redesignated as DCDS Medical. The Naval Chief of Personnel, Vice Admiral Arun Prakash took over as Commander-in-Chief of the first tri-service command known as Andaman and Nicobar Command (ANC). Its major task is surveillance in the Bay of Bengal and the adjoining waters. The ANC will report to the CDS.

Details of the tri-service Strategic Force Command (SFC) comprising the country's nuclear forces have also been finalised. The C-in-C of the strategic forces will also report to the CDS, who will be the principal military adviser to the Government. Tri-service training establishments like the National Defence Academy (NDA) and the National Defence College (NDC) will also function under the supervision of CDS.

The tri-service DIA will be headed by a DCDS and will Pool together the intelligence resources of the three services through coordination and sharing of information. The DCDS (Intelligence) will also be an adviser to the Defence Secretary, Defence Minister, and Union Cabinet, to ensure that the Defence Intelligence inputs reach well in time to the decision-makers.

While the decision of the CDS was awaiting clearance from the Ministry of Finance, the then Air Chief Marshal A Y Tipnis played a spoilsport in its formation. He was not happy with the CDS structure in its present form. Informed sources have indicated that he had written to the Defence Minister Mr Jaswant Singh to put the proposal on hold because the IAF view was not taken into account.

The opposition of the IAF to the revamp of the country's defence management, it now unravels, is proxy war for the control of the 2,500 km Intermediate Range Ballistic Missile Agni II, a nuclear warhead delivery vehicle. The Government has decided to hand over the Agni-Il IRBM to the Army, which has been asked to raise a Strategic Rocket Command to operationally handle surface based nuclear weapons.

All the recommendations contained in the GoM report were accepted by the Government with a modification that before a view is taken on the recommendation relating to the institution of CDS, various political parties could be consulted. The process of consultation with political parties was initiated by issuing letters to National and State level political parties by the Raksha Mantri on 02 March 2006, eliciting their views on the establishment of CDS. A reminder was issued by the Raksha Mantri on 12 June 2006 and again on 11 January 2007. Replies from four political parties only were received and replies from the majority of the political parties are still awaited. The government is seeking a consensus among all the political parties before going ahead with the creation of the post.

The MoD would like the services to believe that pending creation of CDS, the COSC with the assistance HQ IDS, would continue performing the functions of CDS to a large extent. India is perhaps the only major democracy where the Defence Forces Headquarters are outside the governmental structure. The Chiefs of Staff have assumed the role of operational commanders of their respective forces rather than that of Chiefs of Staffs to the cabinet. They simultaneously discharge the roles of operational commanders and national security planners/managers, especially in relation to future equipment and force postures. Most of their time is devoted to the operational role. Future-oriented long term planning suffers even though all the three services headquarters have been integrated with the MoD. At a theoretical level, civilian-military interaction constitutes a critical as well as controversial relationship in any country, whether it is a democracy or a dictatorship. Ideally, civilians and the military form two distinct domains, each with a specific set of functions. As per Clausewitz, while the decision to go to war is made by the political establishment, the military is responsible for the actual conduct of war on the battlefield. Yet this relationship is not as simple as it appears at first glance.

The crying need for a General Number one will not be met anytime soon. Apart from political apathy and bureaucratic opposition, even the Defence forces are reluctant to move forward on the crucial CDS issue at this stage.

Experts, however, feel that in the absence of a CDS, Army, Navy and IAF may well continue to behave without cohesion and effective direction as was seen during the 1999 Kargil conflict.

In fact, it's felt the CDS should be a five-star general, instead of being just a four-star general like the three Service chiefs, with clear-cut authority and full operational powers over the three services and in addition he would be an adviser to the cabinet on defence and national security matters.

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Conduct of Military Operations in Information Age: Implications for India

Major General Y K Gera (Retd)

Introduction

The 21st Century is witness to unprecedented revolution in the field of Information Technology (IT). Modern means of communication have turned the world into an integrated and seamless network of information. There has been a dramatic increase in use of Personal Computers (PCs), Internet, mobile phones, ipods, and spread of e-commerce. Business activities are being better coordinated with the setting up of inter-industry databases, transcending corporate boundaries and forming the nervous system for the full spectrum of corporate activities by sharing information.

Over a period of time, security paradigms have changed radically. It is economic security and energy security, which have attained higher priority. Disaster management capability, therefore, is as important, if not more, than war fighting capability. Asymmetric warfare, rather than conventional warfare, has attained ascendancy internationally. An adversary will seek to wage asymmetric warfare and cripple economic and energy infrastructures rather than engaging military targets. An alternative may be launching of cyber attacks to damage the railway, banking and power grid systems.

In the military domain the Information Technology is bringing about Revolution in Military Affairs. Information can be stored, manipulated and delivered as any other commodity thus enhancing its potential for influence in many ways, both in peace and war. Information Warfare1 has emerged as a major form of warfare, which encompasses actions taken to achieve information superiority by affecting adversary information, information based processes, information systems and computer based networks, while leveraging and defending one's own information.

India has earned a significant place in the global IT industry and aspires to be an IT superpower in the near future. With an expanding IT infrastructure, the nation is getting connected to the 'global village' at a rapid pace. Ironically, the technology that empowers us also exposes us to new threats.

Revolution in Military Affairs (RMA)2

RMA has affected the conduct of operations considerably. This has been enabled by advances in IT systems for aid to navigation, precision guidance and control of weapon systems. Developments in the field of network-centric operations and changes in doctrine leading to 'effects' based warfare, have contributed towards improved efficiency. The revolution is about connecting platforms, weapons, sensors, and decision makers and enabling exchange of timely, accurate, and relevant information and building a common operational picture. The essence is speed of command enabled by improvements in IT and telecommunications.

During the Gulf War in January 1991, images of Tomahawk missiles were shown on television screen hitting their targets in Iraq with astonishing accuracy. The destruction that these 'Tactical Land Attack Missiles'(TLAMs)3 inflicted upon command posts, communication structures, radars, early warning sensors and so on, demonstrated their strategic and tactical significance. The military as well as the national leadership in Iraq was virtually paralysed. The US led air strike missions virtually had a free run after the TLAMs were used with precision on carefully selected targets. Subsequently, TLAMs were used with precision in Sudan, Bosnia and Kosovo achieving the desired results both at the strategic and tactical levels. In Afghanistan, TLAMs were used in 1998 for destroying the militant training camps and hideouts of Osama Bin Laden. An analysis of various stages of TLAM strikes by the USA in different theatres reveals that only the launching of TLAM was conventional, the remaining functions were facilitated by the space based IT systems. These included the following:-

(a) Intelligence about the target area.
(b) Command and control of strike mission.
(c) Weather forecast.
(d) TLAM in-flight navigational guidance.
(e) Damage assessment after the strike.

TLAMs can help the political leadership to flex muscles and exercise coercive diplomacy when required. Their long range, surgical precision and negligible collateral damage make them weapons of choice. This is particularly so because though nuclear weapons are considered as the currency of power, it is being advocated that in a civilized world these must never be used for fighting wars.

Comprehensive National Strength

Comprehensive National Strength is a combination of a country's overall capability in terms of its system of governance, economy, scientific base, military capability, human and material resources, social development, environmental factors, judicial system, diplomatic profile and internal cohesiveness. A country's ability to influence global and regional affairs is directly proportional to its perceived National Strength. India is doing well economically. However, there are certain issues, which if not addressed concurrently, can cause setbacks.

Threats and Challenges

As India grows economically and in strategic terms, its footprint will extend beyond the immediate region. It will have a growing role in international institutions and groupings. However, in this paper discussion is limited to military aspects.

In the near and mid-term, the Armed Forces are more likely to fight non traditional conflicts involving counter terrorism on land, at sea, and in the air. In addition, the Armed Forces may be called upon to stabilise volatile strategic environment around India through power projection if required. Force may have to be projected to secure our off shore assets, island territories, Indian diaspora abroad, and to assist friendly nations when invited. In addition, the Armed Forces are called upon to undertake disaster management and peacekeeping operations. The modern battlefield scenario is characterized by rapid mobilisation, accurate battlefield visualisation, integration of surveillance systems with weapon systems and increased requirement of shared battlefield awareness. These necessitate a paradigm shift towards network centric warfare.

STRATEGIC ISSUES

India's Military Capability

India has highly professional and well-equipped armed forces that are capable of acting at short notice to protect its national frontiers. Apart from the Service specific commands, we have created two integrated commands, i.e. the Andaman and Nicobar Command and the Strategic Forces Command. Though these are tri-service commands, they have specific roles and are not structured for military intervention, power projection, humanitarian assistance and other eventualities that may arise in the regional and global context.

The Group of Ministers in their recommendations on "Reforming the National Security System" in February 2001 had stated-"The Chiefs of Staff Committee (COSC) has not been effective in fulfilling its mandate. It needs to be strengthened by the addition of Chief of Defence Staff (CDS) and a Vice Chief of Defence Staff (VCDS)." With greater emphasis on joint and integrated operations in the future, the system was to be reorganised with a CDS and a VCDS together with an integrated staff. Although the staff has been provided, due to various reasons the CDS has not been nominated. At the regional commands there is no "Jointness" in planning as per the present organisational structure. Each Service plans separately and attempts to coordinate operational plans later at the regional command level, with the other Services. The regional command headquarters of the three Services are neither co-located nor networked. Hence joint operational planning and real time sharing of intelligence picked up by various sensors of the three Services is not possible. As future conflicts are likely to be of short duration, requiring selective use of force, lack of integrated organisations would preclude optimisation and efficiency in joint operations.

India needs to create appropriate military capability taking into account likely threats to national security and the role envisaged at the regional and global levels. In this context, India's experience in Sri Lanka and the Maldives would provide valuable guidance. The command, control, communications and surveillance requirements for such a capability would have to be specially structured. Sufficient redundancy would need to be catered for to absorb add-ons by way of specialised elements that may be required for humanitarian, peacekeeping and peace-building operations. Capability to sustain forces away from our shores should be catered for. This would require maritime and aerospace assets. Interoperability and interfacing with friendly forces of foreign countries should be factored in.

The approach should be to build capability to be able to respond immediately with a small balanced and self contained tri-service force in any contingency. Additional forces can be built up as the situation develops. The political 'will' to create and commit such a force would have to form part of India's Security Strategy.

Information Infrastructure

Critical National Information Infrastructure4. The critical sectors of our nation include energy, transportation, banking and finance, telecommunications, defence industrial base, government, and emergency services. Most of these sectors are dependent on cyberspace for their functioning.

Defence Communications Network. The three Services are modernising their networks and suitable gateways are being catered for integration at appropriate levels. The existing communication networks do not allow the type of interoperability required. The completion of the Defence Communications Network (DCN) 5 which is being fielded as tri-services strategic communication network for implementation of the Command, Control, Communications Computers, Interoperability, Intelligence, Surveillance and Reconnaissance (C4I2SR) concepts, will lead to the connectivity down to corps headquarters in the Army, maritime operations centres in the Navy and air defence direction centres and airfields of the Air Force. The tri-service architecture has been finalised after conduct of military war games.

Army's Information Infrastructure. It is based on optical fibre cable, microwave, VHF and UHF radio, coaxial cable and satellites, and is either owned or hired media. More and more data is being processed and stored on networks. Networks have enabled integration of the sensors, shooters and decision- makers, enabling faster reaction time. Network survivability in the modern warfare would be critical and may prove to be a battle winning factor.

Network Centric Warfare

What is Network Centric Warfare (NCW)6? It is a product of convergence of computers and communications and their exploitation to bring to bear maximum combat power at the right time and place. The essence of NCW lies in translating information superiority into combat power by effectively linking knowledgeable entities in the battle space. Akin to the Metcalf Law 7, power of a force grows proportionate to the extent of networking among weapons, sensors, and command and control elements. Thus, networking is a potent force multiplier. Network centric operational concepts are based on:-

(a) Dominant manoeuvre.
(b) Precision engagement.
(c) Focussed logistics.
(d) Full dimensional protection.

Domains of Warfare.8 There are three established domains of warfare :-

(a **Cognitive Domain.** It encompasses the mind of those fighting the war and the supporting populace. Intangibles like leadership, morale, training, public opinion and so on, are part of this domain. Intention, doctrine, tactics and techniques form part of this. Most battles are won or lost in this domain. It involves carrying out of appreciation and formulation of operational directives and orders.
(b) **Information Domain.** Information is created, processed and shared in this domain. Collection of information and converting it to intelligence and passing of operational orders and directives is done in this domain. Information superiority is achieved by the integration of sensors, shooters, and decision makers.
(c) **Physical Domain.** This is the traditional domain of warfare and contains physical platforms and communication networks that connect them. Strike, protection and manoeuvre across the environment i.e. ground, sea, air and space takes place in this domain. In simple terms it involves actual destruction of enemy.

Information Operations (IO). These are actions taken to achieve information superiority by influencing the information based systems, processes, communications and data networks of the adversary. It is a deliberate effort to gain access to, temper with, and exploit information systems of the adversary, while at the same time preventing him from doing the same to us. It comprises information dominance and information assurance. While the former is an offensive action, the latter is defensive in nature. The components of IO are as under:-

(a) Command and Control Warfare.
(b) Intelligence Based Warfare.
(c) Counter Surveillance Warfare.
(d) Perception Management.
(e) Net Warfare.
(f) Electronic Warfare.

NCW: Army Doctrine. The Army doctrine on NCW was released in October 2004. Highlights are as under;-

(a) Emphasis is on Information Warfare and fielding of C4I2SR systems.
(b) Creation of technological asymmetry to increase battle field transparency and situational awareness.
(c) Development of Force Multipliers with increased precision.
(d) Perception management.
(e) Emphasis is to be laid on C4I2SR systems.
(f) Impact on low intensity conflict and asymmetric warfare.
(g) Changes in concepts, organisations and attitudes. The Armed Forces are not integrated. Some stand alone capabilities exist within each Service. The Network Centric Warfare will have to be forged on suitably integrated organisations, new technologies, joint concepts and doctrines, and joint training and communication architecture.

Transition from Platform to Network Centricity. It will involve the following:-

(a) Radical attitudinal change by the military leadership and transformation in style of command.
(b) Joint war fighting doctrine.
(c) Centralised planning and decentralised execution.
(d) Create integrated regional commands.
(e) National ‘will’ to take hard decisions.
(f) Develop appropriate technologies.
(g) Increase user awareness and address issues of information assurance and cyber security. Our tactics will need to exceed the velocity of warfare of the enemy in all dimensions. It would involve joint training.

CONDUCT OF TACTICAL OPERATIONS IN INFORMATION AGE

Technology and Transformation in Military Operations

Throughout history military doctrine, organisation and strategy have continually undergone profound technology

driven changes. Newer technologies and concepts have been successful in creating a distinct asymmetry between the warring sides, resulting in the rout of the side, which failed to change in keeping with the times. Industrialisation led to attrition warfare by massive armies in World War I. Mechanisation led to manoeuvre predominantly by tanks in World War II. The information revolution implies the rise of a mode of warfare in which neither mass nor mobility will decide outcomes; instead, the side that can disperse the fog of war and yet enshroud an adversary in it, will enjoy decisive advantages. Information is becoming a strategic resource that may prove as valuable and influential in the post- industrial era as capital and labour have been in the industrial age. In the tactical field, in order to enhance the conduct of military operations, there is a need to integrate all aspects of information and accomplish its full potential.

Information is the foundation of knowledge based warfare. It enables commanders to coordinate, integrate, and synchronise combat functions on the battlefield. Commanders seek information dominance that defines how the adversary sees the battle space, creating the opportunity to seize initiative and set the pace of operations. There is a need to embrace the emerging information era as it is bound to have a major influence on operations. Successful integration of information systems is bound to affect the full range of military operations including contributions to increased lethality, survivability and operational tempo across the spectrum of conflict.

In the Armed Forces due to various constraints we have to live concurrently with the past, the present, and the future families of equipment and associated technologies. While the process of jointness and integration is taking time, we have to optimise the use of modern systems being inducted in the Services progressively.

Appreciation of Situation

For undertaking tactical operations an appreciation of the situation is generally carried out. For evolving a plan of action some of the following factors are considered:-

(a) **Ground.** It involves awareness regarding terrain including objectives and targets and battlefield transparency.

(b) **Relative Strengths.** Strength of available enemy and own forces that can be employed for undertaking operations.

(c) **Time and Space.** This factor has a bearing on timely completion of operations being undertaken as well as linkage with higher commander’s subsequent plans.

Affects of advances in IT on different factors considered for conduct of tactical operations are discussed in succeeding paragraphs.

Ground

Battlefield Transparency.

(a) **Digitisation.** Till recently for decision making, commanders relied on situation reports, marked maps with overlays, reconnaissance reports and intelligence summaries. The staff officers after piecing together the available inputs carried out analysis and generated alternatives to help commander in decision making. The digitised system depicts more accurately, own locations including subordinate units and sub-units as well as the enemy locations. The battlefield has become more transparent and more sophisticated means will have to be adopted for camouflage and concealment. It will provide sufficient details to enable commanders a better comprehension and situational understanding.

(b) **Network Technology.** Sensor-shooter integration enabled by network technology and availability of intelligence, surveillance and reconnaissance assets like UAVs, drones, RPVs, and space platforms have increased battlefield transparency. During operation ‘Desert Storm’ the USA had no more than 15 per cent information on military significant targets. This figure increased to above 65 per cent during ‘Operation Iraqi Freedom’.

(c) **Space: New High Ground**. Rapid and responsive military operations require timely and accurate reconnaissance reports, weather monitoring, precise navigation assisted by Global Positional System (GPS) and reliable communication linkages. We need to have control of space, which empowers assets to detect, identify, monitor, track and even destroy enemy resources.

Relative Strengths

Lean Forces with Technological Superiority. Technology enabled lean but more lethal fighting force can succeed in offensive operations against numerically superior force which may not be possessing sophisticated weapon systems. This aspect got highlighted during ‘Operation Iraqi Freedom’.

Calculation of Force Levels. The concept of calculating conventional force levels required to capture an objective has got radically altered on account of force multipliers. Smart munitions delivered from an aircraft are more likely to accomplish certain missions, which perhaps could be accomplished by employing an air force squadron during the Second World War. Advancing columns of armour can be identified from space, targeted in real time and attacked by a handful of missiles. Enemy command and control structure can be identified and attacked with crippling accuracy. A small well equipped and trained force can cause more devastation and accomplish more than what was possible in earlier wars.

Lethality and Smartness of Munitions. Out of approximately 28,000 bombs dropped in Iraq, during ‘Operation Iraqi Freedom’ 70 per cent or so were smart bombs leading to an environment where “every thing that could be seen, could be hit, and everything that could be hit could be killed.”

Time and Space

Time. In the past, commanders enjoyed a comfortable cushion of time as they approached the 'next hill'. Sensor-to- shooter links have been automated to reduce the time lag between identification of target and decision and effective engagement. Ranges and lethality of weapons has increased and time to target has reduced. The trend of compression of time would increase in future leading to a higher velocity of warfare. An untrained commander will be seriously handicapped because of inability to act or even react in fast changing situations.

Space. The battle space has expanded in all three spatial dimensions. In part, this expansion has been the result of improved flow of information. Distance in battle space is no longer constrained by telecommunication technologies. Another factor is the development of rocket and missile technologies with longer ranges. This has further obscured tactical and strategic boundaries. There is a requirement to redefine battle space in the digital era. In a non-digital battlefield, operations require a linear concept of allocating troops to face a host of contingencies. In a digital battlefield we have time and information as the operational mobility can now match the intelligence and can exercise appropriate option.

Implementation of Tactical Operational Plan

Acquisition of Intelligence. During peace time the focus is on strategic intelligence involving use of satellites, sensors, interception and monitoring of adversary's networks and communications. Over a period of time database regarding adversary's orbit and details of formations and units is created. On mobilization during the concentration phase tactical intelligence must be built on the database already available. A doctrinal template of adversary's pattern of conduct of operations should be made and validated as more and more inputs become available. With the fielding of tactical Command, Control, Communications, and Intelligence (C3I) system, it will be feasible to generate near real time situational awareness. The digitised system is bound to be a good tool to create accurate, timely and useful picture regarding the enemy.

Dissemination of Information and its Use. A difficult challenge to the efficient use of information is getting the right information to the right place at the right time. To a certain extent technology can help in finding a solution. Proper placement of hardware, user friendly software, use of access codes, and so on can help in promoting functional efficiency. Information overload should be guarded against. To do so two alternate approaches can be adopted:-

(a) Disseminate only information considered appropriate to the task in hand. The commander should be able to work with the available information.
(b) Hold information in the central data base. The commanders and staff should be able to retrieve what is needed.

Unity of Command. It demands a clear comprehension of the doctrine, strategy and training needs at different levels. There is a need to make available appropriate resources at each level. In order to ensure reliability and flexibility, sufficient redundancy should be built while planning networks. System architecture should enable delegation and decentralisation.

Dispersion of Forces. Due to battlefield transparency, wide dispersion of forces with ability to concentrate quickly for offensive action would be required. Commanders will have to anticipate two or three moves ahead to optimise operational effectiveness. Mobility of forces in the area of operations should be ensured by appropriate means depending on the nature of terrain.

Manoeuvrability. Availability of adequate reserves and their employment at the appropriate time can be a battle winning factor. Reserves once deployed should be created again. Near real time flow of battlefield information can help the commander to anticipate well in time. This will help in maintaining momentum and subject the enemy to shock action. To exploit favourable situations, manoeuvrability of forces and flexibility of mind on the part of the commander are very essential.

Personal Dimensions of Command

Fielding of C4I2SR System. There appears to be a lurking fear of walking away from the personal dimensions of command into an impersonal cyber future. In actual fact many of the personal dimensions of command will remain unchanged and will assume greater importance. The fielding of tactical C4I2SR system will facilitate the commander to perform functions of command more efficiently.

Dissemination of Commander's Intention. The vertical and horizontal grid will facilitate dissemination of commander's intention in near real time in the formation. The digital format will facilitate a clearer picture and interaction among subordinate commanders so very essential for reaching a detailed and common understanding.

Physical Presence of Commander. Digitisation can help in building picture of when and where commander's presence on the battlefield will be crucial. This picture can be pieced together at an earlier stage than ever before. Commander should be comfortable with the information tools to facilitate his functions of command and yet be equally comfortable with standing on the jeep hood when the situation so demands. Subordinate commanders need to hear the tone of the senior commander's voice and the sense of urgency when the orders are given. Embedding of an audio network in the digital system to supplement orders passed on data network would be of help. Video teleconferencing can also help in projection of commander's personality.

Training of Commanders and Staff

Proper training needs to be organised to enable commanders and staff to become familiar with near real time availability of information and its form of presentation. In the information age commanders will have to get used to making decisions based on more accurate information than was previously available. After synergising doctrine, tactics, techniques and procedures; computer war games, telephone battles and exercises with troops should be conducted to enable all concerned to get a feel of the digitised environment and the likely way ahead.

CONCLUSION

The changing concepts of warfare are driven by the available technology of the times. While sophisticated weapons and sensors have greatly enhanced combat efficiency, developments in information and communication technology have enabled greater connectivity and information sharing among widely spread force components. The concept of 'Network Centric Warfare' has been evolved for exploiting advancement in the field of 'Information Technology'. This concept rests on the premise that the power of a force grows proportionate to the extent of networking among weapons, sensors and command and control elements. The Indian Armed Forces are not yet ready for it. To attain the capability of switching to 'Network Centric Warfare', we need to do the following:-

(a) Chief of Defence Staff should be nominated as per February 2001 recommendations of the Group of Ministers on "Reforming the National Security System".
(b) Integrate regional commands.
(c) Evolve a joint doctrine for fighting future wars.
(d) Evolve joint communication architecture based on new technologies.
(e) Progressive training to bring about attitudinal changes on part of the military leadership.

There is a need to embrace new information technologies to enhance the art of command and control at the tactical level. While the principles of conduct of warfare may not change, the information technology tools have vastly altered the breadth and pace of commander's actions. We should optimise the gains from information technologies and work out what needs to be covered during training at different levels in the interest of functional efficiency.

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Pre-emption Vs Cooperation : Reframing The Choice

Lieutenant Colonel Sarvesh Sharma

Introduction

The year 1991 was a seemingly momentous year in shaping the future world order owing to the collapse of the Soviet Union and the success of the US led coalition in the first Gulf war. It seemed that it was the dawn of a new world order based on a shared commitment of peace, respect for freedom. Reduction of lethal armaments, free trade and globalisation. Possibly no one had ever imagined that a single terrorist strike a decade hence would shape the world order afresh. john Lewis Gladdis has summarised the happenings very well. “The Post Cold war era began with the collapse of one structure, the Berlin Wall on 9 November 1989 and ended with the collapse of another, the World Trade Centre's Twin Towers on 11 September 2001”1.

US Foreign Policy: A Paradigm Shift

Over the years, there has been a paradigm shift in US foreign policy. The success of the US led coalition in the first Gulf War and the collapse of the Soviet Union in 1991 seemed to have heralded an era of constructive engagement to promote peaceful co-existence. This seemed to be the main pillar of George Bush Sr’s foreign policy. The post cold war realignments were still underway when Saddam Hussein tried to capitalise on the prevailing uncertain linkages and occupied Kuwait. The Americans responded promptly to neutralise the challenge, because this had put in jeopardy the opportunities provided by the end of the cold War for a harmonious and co-operative international order with the US at the helm2. This propelled the US into a position of strength right at the beginning of the post cold war evolutionary stage of the international world order. However, the UN support sought by the US eventually proved to be misleading. Bush’s interventionist foreign policy and economic nationalism paved the way for a unilateral policy with multilateral connotaions3.

Clinton outlined his national security strategy of engagement and enlargement in a speech of July 1994. “Our national security is based on enlarging the community of market democracies while deterring and containing a range of threats to our nation, our allies and our interests”4. The Clinton administration endeavoured to strengthen the NATO, international institutions such as the UN, IAEA and they placed greater emphasis on cooperative security.

George Bush Jr in his inaugural address stated that, “America remains engaged in the world by history and by choice, shaping a balance of power that favours freedom. We will defend our allies and our interests. We will show purpose with arrogance. We will meet aggression and bad faith with resolve and strength. And to all nations we will speak for the values that gave our national birth”. Non-proliferation, missile defence and promotion of democracy were key elements of the foreign policy.

For President Bush, 11 September 2001 came as a revelation, leading him to the startled conclusion that the globe had changed in ways gravely hazardous to the security–indeed the very survival of the United States. This conclusion soon led Bush to a fateful decision; to depart in fundamental ways, from the approach that has characterised US foreign policy for more than half a century. Soon, reliance on alliance had been replaced by redemption through pre-emption: the shock of force trumped the hard work of diplomacy and long term relationships were redefined5. Bush’s famous statement “Every nation, in every region, now has a decision to make. Either you are with us, or you are with the terrorists”. These words heralded the advent of a new world order.

Thus did the US announce that the Westphalia State System, which had governed international relations pretty much since 1648, had come to an end. The twin doctrines on which it was based–national sovereignty and the duty of countries not to intervene in the internal affairs of others–were now obsolete. Its place was being taken by a new order based upon the principle of an Empire, an American Empire6.

Bush made his choice ignoring the advice of senior statesmen, including his father who stated “this most recent surprise attack should erase the concept in some quarters that the United States can somehow go it alone in the fight against terrorism, or in anything else, for that matter”. But his son stated his choice shortly before invading Iraq “At some point, we may be the only ones left. That’s okay with me. We are America”.

Global Reaction to the 11 September 2001 Attacks

America’s policy of pre-emption needs to be viewed in light of the fact that the 11 September 2001 attacks were not met by indifference by the world community. The Muslim world was united in condemning the dastardly acts, including Iran and the Palestinian authority. A large number of US allies joined hands to assist the military campaign against the Al Qaeda and Taliban in Afghanistan. Even China and Russia pledged solidarity7. This could have been harnessed as a unifying factor to fight the common enemy of terrorism. However, this platform though available was not made use of by the Americans to their advantage. In his 2002 State of the Union address, President Bush focussed more on the axis of evil rather than the Al Qaeda. When the administration published its 2002 National Security Strategy, it took this process even further, transforming anticipatory self defence – a tool every President had quietly held in reserve – into the centre piece of its national security policy8.

In 2003, Washington once again started garnering support for its war against terror – this time to oust Saddam Hussain by use of force and then politely called it ‘regime change’. The United States then went to war having garnered the support of only four members of the UN Security Council. Iraq was portrayed as a rogue state in possession of Weapons of Mass Destruction (WMD) and with a leader at the helm of affairs who could very well harm America's’ interests by their use. Al Qaeda and Iraq were termed as complementary halves of the same existential threat9.

The problem is that the President had reframed his initial question of every nation having to make a decision post – 11 September 2001. Madeline Albright has very aptly put it in the following words “instead of simply asking others to oppose Al Qaeda, he now asks them to oppose Al Qaeda, support the invasion of an Arab Country, and endorse the doctrine of pre-emption–all as part of a single package’’10.

Potent Threats Emanating from this Doctrine

The US doctrine of pre-emption has brought into sharp focus a number of important issues. Some of these are; is the sovereignty of a nation guaranteed or under constant threat from a nation engaged in democratisation, nation building and regime change with or without the acceptance of the world community. Does the UN have any relevance any more. Does the Trans-Atlantic rift portend a turbulent future. Has this policy left no breathing space for moderate Islam? Has America been successful in enduring non-proliferation or is it that wielding the nuclear threat is essential to be able to deter the bully.

The Threat to Sovereignty of Nations. According to President Bush, the US has “expanded the circle of liberty and security and development that brought unity to Europe, self governance to Latin America and Asia and new hope to Africa”. Has one nation’s foreign policy rendered the Westphalian State System obsolete? Do the people of a nation not have the right to make their own decisions? Was the Iraq war not more out of choice than out of necessity? Are the threats to the sovereignty of Syria and Iran justifiable? Where will the US gaze of regime change, democratisation or non-proliferation fall next? Does sovereignty hold good any more as an ideology respected by the world community? Did the bipolar world order not safeguard the interests of nations and their people much better? So has this policy of pre-emption not made the equipoise of global world order much more fragile?

Role of The UN. A distinguished former Security General of the UN said in his annual report in 1948, “the main purpose of the UN was, and is, to unite our strength to maintain international peace and security”. The unilateral actions of the US put in question the role of the UN in today’s world order. The Anglo-American failure to obtain the second resolution was just their failure. It was not a defeat for the UN but for those who attempted to get the UN to bless their war plans. It was surely to the UN’s credit that it refused to fall in line with the demands of its most influential members11. The credibility of the UN remains unquestionable, and a positive spin off of this action has been the rejuvenation of the debate about the expansion of the Security Council and the proposed reforms. An enlarged council with broader representation is the need of the hour.

The Trans-Atlantic Rift. The global coalition against terror was born out of commonalities which overwhelmed the differences. However, as the ‘war on terror’ progressed, the differences became more compelling than the common interests. A common prescription namely pre-emption for fighting terrorists and rogue states caused a Trans-Atlantic rift. The rift became more prominent when the US decided to invade Iraq. France and Germany were the most vociferous in their opposition for such an act of aggression. Such a rift does not augur well for the world order. Greater co-operation will undoubtedly ensure in limiting and containing problems and enabling forming alliances rather than coalitions of the willing. This Trans-Atlantic rift has also weakened the NATO. If use of military force was deemed essential, then could the Kosovo model not have been applied in Iraq? In Kosovo the democratic transition has been brought about by a NATO led peacekeeping force, incorporating Russian participation. The UN administrators are being very ably assisted by the EU and Organisation for Security and cooperation in Europe. Such a participative democratic transition is a role model, as everyone has a sense of belonging and works towards success, besides, the effort is shared and there is of course greater legitimacy. The challenge for the United States is to frame a choice for Europe that most of Europe can embrace with dignity. Differences with the US policy must be considered seriously and not dismissed as a sign of weakness or tantamount to treason12. Participative co-operation is the need of the hour. The diplomatic engagement with Iran having been delegated to the Europeans is a step in the right direction.

Non-Proliferation Vis-a-Vis Strategic Defiance. Non proliferation was the American ideal being pursued very vigorously. But it needs to be seen whether the US policy of pre-emption has aided in achieving this ideal or rather encouraged nations to wield the nuclear threat as a means of strategic defiance. Iraq was invaded on the premise that they possess WMDs. However that justification sooner than later came to a naught. At he same time North Korea proclaimed that they possess WMDs and challenged America with their strategic defiance. Even Iran is pursuing the development of WMDs, at least so believe the Americans. America has dealt with North Korea with velvet hands and not an iron fist. It seems the nuclear deterrence has mellowed down the American response. So what has been achieved is a state wherein countries on the American hit list are now wielding the nuclear threat as a means to keep the ‘big bully’ at bay. Non-proliferation cannot succeed by use of force. The very reason for their possession, i.e. insecurity among nations needs to be addressed. The current US policy is only giving impetus to proliferation of WMDs.

Clash of Civilizations. The war on terror has also been termed as a clash of civilizations. As per General Mirza Aslam Beg, the strategic loss of an enemy, post cold war, was made up by the US strategic thinkers by creating a contrived enemy – Islam. This seems to be a radical view. However, if the war on terror has to be won, then moderate Islam must be allowed to raise its head. the current US strategy has brought radical Islam to the fore. Iraq, one of the most moderate Islamic nations is today besieged with terrorism and has become the new

breeding ground for terrorists. So are they fighting terrorism or further promoting it by their actions? Support from the Islamic world for the war on terror would be forthcoming if the issues of terrorism, WMDs, regime change are not interpolated by the US as complementary halves.

Reframing the Choice

The choice preferred by the USA – pre-emption, preventive war, coalition of the willing rather than alliance of the supportive, needs introspection and reframing. First of all it needs to differentiate between the war on terror, non-proliferation and rogue nations.

Next, the USA needs to realise that the war on terror cannot be won in a stand alone mode. The common enemy of terrorism needs to be fought from a common platform.

International institutions like the IAEA, the UN need to be strengthened and co-opted in achieving the desired end state. Consultation with the world community and showing respect for their belief is another important facet towards participative resolution of discords. There is a pressing need for sweeping reforms of the international system as represented by the United Nations. A border representation in the Security Council is imperative if we have to collectively face up to the future security challenges.

Non-proliferation itself must discard outmoded concepts and redirect efforts on sources of true proliferation concern. Its success as a collective effort would obviate the need for regime change to ensure non-proliferation13.

Conclusion

A co-operative model rather than a pre-emptive model needs to be adopted for conflict resolution. Respect for well established international bodies and the world community as also consultation is the way out. The same has been corroborated by the successful negotiations with North Korea and their positive intent announced on 03 October 2007. This was possible due to the concerted efforts of six nations led by China.

Multi-polarity must not be misconstrued as a policy creating two poles opposing each other. Collective decision making and an enduring spirit of consensus building would be the hallmarks of a stable and effective multilateral system. Yaswant Sinha has aptly put in words, “If Globalisation is the trend, then multilaterism is it's life-sustaining mechanism, for no process will survive without a genuine spirit of multilateralism, underlined by the belief that global problems require global solutions globally arrived at. Otherwise the world faces the risk of repeating the mistakes of the past”. Unilateralism seems to have met its end and a new world order is on the horizon, as the Indian Novelist Arundhati Roy has forecasted, “Another world, is not only possible, she is on her way. On a quiet day, I can hear her breathing”. Its time that America sat up and listened to this whisper, before it becomes a noise.

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Veterans and the Society*

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We are what we repeatedly do.Excellence is therefore not an act but a habit. - Aristotle

"I have been impressed with the urgency of doing. Knowing is not enough; we must apply. Being willing is not enough; we must do." - Leonardo da Vinci

"Apply yourself. Get all the education you can, but then, by God, do something. Don't just stand there, make it happen." - Lee Iacocca

INTRODUCTION

Since Independence in 1947, the defence forces in general and the army in particular, have been viewed as the defenders of the nation, kept and maintained to fight the country's wars and conflicts. Over the years, the defence forces have developed into a highly professional body, and remained "apolitical". During these years, although the civil society has been transformed radically, the influence on the defence forces has been marginal at best.

Henceforth, when I use the word 'army', it will be in the generic sense and will cover all the three services – army, navy and air force.

All military personnel in India voluntarily choose the defence forces as a career. They have led and continue to lead a segregated life in various military stations, whether in 'field areas' or in 'peace stations'. The army is a self-contained institution, which caters for all the needs of its officers and men, as well as their families. This is so in both field areas and peace stations. Although life in the army is extremely active and demanding, it is also enjoyable and is in many ways akin to a home, where all one's requirements are met.

This cloistered existence tends to keep all army personnel somewhat detached and not fully in sync with the real situation in the civil society. Contacts with the civil society are infrequent; mostly confined at the official level and with friends and relatives during leave. Of course, all personnel are in touch with events, perhaps even more than their civilian counterparts, through the media and the large number of events that the army organises, more or less on a continuous basis. However, our view tends to get coloured by our own actions, which in turn are due to the discipline, camaraderie and the ethos of brotherhood and sacrifice which prevails in the defence forces. The antics of political leaders and the gradual decline of the bureaucracy are looked at from a superior stand point, because of the elitism which all ranks feel for their chosen profession. This attitude is encouraged by the superiors, as it results in professional advancement, increase in self-confidence and a work culture that produces results.

In the last three decades or so, the situation has changed, because of ever increasing involvement of the army in counter insurgency and counter terrorism duties. At one level, the quality of life of the officers and men has taken a downward slide and at another level, there is better understanding of the civil society, on account of the increased interaction with both citizens and civil government officials. Despite this, the warm cocoon provided by the army institutionally continues.

We need to look at the veterans in the light of this background. When personnel of the defence forces cease to be on the active list, either because of superannuation, retirement or being boarded out on medical grounds, they step into a somewhat alien world, where re-integration with the civil society is not easy. They find that there is a mismatch between the veteran's aspirations from the society and in turn, the society's expectations from the veterans in contributing to the well being of the community.

The Indian Army is over 1.1 million strong today. As the strength of the Army increases, so does the strength of the veterans. Added to that is the increase in longevity, which further adds to the strength of the veterans and their families. For a veteran's population of this size, the number and extent of plans, both for their welfare and using their talents are abysmally low. The existing policies and plans touch only peripheral areas, which do not give much satisfaction or joy. Most professional militaries do have elaborate policies and schemes for their veterans, but in India, neither the central government, nor the state governments, nor indeed the service headquarters focus adequately on the veterans. Resultantly, the situation today is that the veterans are playing little role in nation building; neither is their considerable talent being tapped.

BACKGROUND

Nearly sixty thousand personnel of the defence forces retire annually and revert to the civil society from where they had joined the service two, three or four decades back. Our jawans retire in their late thirties; the junior commissioned officers (JCO's) in their mid-to-late forties and the bulk of the officers retire in their mid-fifties. These are young ages indeed. Even the 15 to 18 three star officers (lieutenant generals and equivalent), retiring annually, do so at the age of 60, which also is a comparatively young age. They still have many productive years ahead.

The veterans bring with them a lot of talent, but find that there are no takers for their expertise, not only in the area of security, but in many diverse fields. The army teaches us many skills, which not only make us win battles and wars, but makes personnel outstanding leaders, managers and administrators, whether they go home as majors or major generals or as a naik or a subedar. Till a few years back, the problem lay with us, as we could not project our skills and worth to the corporate world, as well as others who could have used the military in their ventures, in the language they understood. We have now changed that by translating all skills into corporate language, but the malaise persists.

Most veterans are young and have many family liabilities. Although they get a pension from the government for services rendered to the nation, it is obviously not enough and hence most are under pressure to look for a second career. This is applicable to both officers and men. However, till the last few years, there were no jobs for them. For the jawans, both the central and state governments have reserved some Group C and Group D posts. The reservation in the central government ministries and departments is 10 and 20 per cent in Group C and Group D posts; in public sector undertakings (PSU's) and banks it stands at 14.5 per cent in Group C and 24.5 per cent in Group D posts. They look nice on paper, but are never fully filled. Only a token are taken and the others rejected on flimsy grounds. The statistics speak for themselves. In 2007, a total of 4, 222 veterans were given employment in civil jobs. The figures for 2006 and 2005 are 7,230 and 3,677 respectively. In any case, there are no reserved jobs in the government, the PSU's or the private sectors for officers and JCO's.

Society has vast expectations that the veterans will play a vital role in 'nation building' activities. Before we proceed further, there is a need to understand what we mean by the term 'nation building'. Nation-building, as it is commonly referred to, is a broad effort to promote political and economic reforms with the objective of transforming the society. The aim of such efforts is to redirect the competition for wealth and power, which takes place within any society. Nation building tasks include security in all its manifestations; humanitarian relief, if needed; good governance; economic stabilisation; sustaining democracy; and developmental tasks, which include fostering economic growth, poverty reduction, and infrastructure improvements. The ultimate objective of any nation-building mission is to create a society, which remains at peace with itself. Such tasks take time, energy and funds to accomplish.

Nation-building includes the creation of superficial national paraphernalia, like flags, symbols and so on, but at a deeper level, national identity needs to be deliberately created by moulding different groups into a nation, especially since colonialism had used divide and rule tactics to maintain its domination. Even after 60 years of Independence, this aspect continues to be important.

One may well say that these are tasks for the government, as it has many instruments to perform these tasks. This is theoretically correct, but governments by themselves cannot achieve them, unless the civil society joins in wholeheartedly. Within the civil society, the veterans are the most suitable group that can motivate the others and act as catalysts for this important task. We will revert to this subject a little later, after I have covered some factual details.

It is unfortunate that there are no schemes or plans of the government for involving the veterans in the process of 'nation building'. In fact, the ground situation today is that the three entities who should have such plans, viz. the army or the defence forces, the central government and the state governments have formulated practically no plans for the veterans.

ORGANISATIONAL STRUCTURES AND INSTITUTIONS

The veterans expect a lot from the army, without understanding that the army has no organisation for the veterans. The branches at Army Headquarters, which deal with welfare, ceremonial and personnel matters i.e. the Adjutant General's and the Military Secretary's branches are designed only for serving personnel and some minimal work for the veterans, like pension anomalies, medical boards, pending allotment of medals and so on. The same situation prevails in Command and lower headquarters. Yet, the veterans expect them to solve all their problems, without realising that they are neither designed nor tasked to do so. It must however be clarified that the army is such a wonderful organisation that if one approaches it with a problem, all efforts are made to help the individual, even though it is not a task assigned to them. I am afraid this does not happen in the other Class 'A' services of the government of India or the states.

The question that arises is -'should the defence forces be tasked and consequently structured for a role relating to the veterans'? There are divergent views on the subject, but if the ministries and departments of the government have failed miserably in this respect, perhaps there is a case for the Services to take on the mantle, although this does not fall under the purview of the defence forces.

We next come to the government of India or the central government. Let me clarify here that in accordance with our Constitution, welfare of veterans' falls both in the central as well as the state lists.

The present UPA government had announced, with much fanfare, that they would set up a separate department for veteran affairs, but all they have done is to take out existing entities and put them under an additional secretary, thereby creating one more post for the bureaucracy! The entities under him are doing the same job as they were doing earlier. There is also no political overseeing of the department, as no minister has been appointed. The new department called "Department of Ex-Servicemen Welfare" was created on 22 September 2004. Organisational structure is shown on Chart 1. The main objective of creating this department was to give focussed attention to the welfare programmes for ex-servicemen and their dependents, including pensionary benefits, re-employment and rehabilitation. It has the following broad functions:-

(a) All aspects of re-settlement and welfare of ex-servicemen and their dependents, including liaison with

State Governments.

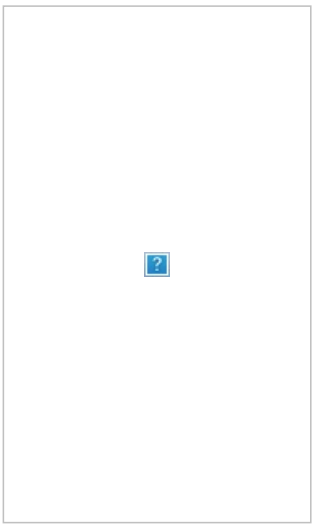
(b) Ex-Servicemen's Contributory Health Scheme (ECHS).

(c) Matters relating to the Directorate General of Resettlement and Kendriya Sainik Board.

(d) Administration of all aspects of pensions.

There were about 19.50 lakh veterans and about 4 lakh widows registered as on 30 June 2005. The number of veterans is increasing rapidly and is assessed as 22 to 25 lakh. When you add up the strength of their immediate families, the numbers exceed a crore. Is the Department achieving these tasks to the satisfaction of the veterans? I am afraid not, but let us proceed further.

The Department of Ex-Servicemen Welfare formulates various policies for the welfare and resettlement of the veterans in the country. It has two divisions - Resettlement and Pension. The Department is assisted by two Inter Services Organisations, Directorate General of Resettlement (DGR) and Kendriya Sainik Board (KSB). Whereas the KSB, which is headed by Raksha Mantri as its ex-officio President, lays down general policies for the welfare of veterans and their dependents and also administers welfare funds, the office of the DGR is responsible for various policies/schemes/programmes adopted by the Government. The DGR has five Director Resettlement Zones (DRZs) in five Army Commands.



The KSB and DGR are also assisted by various Rajya and Zila Sainik Boards, which are under the administrative control of respective state governments. The Government of India and the state governments bear 50 per cent each of the expenditure incurred on the organisation of RSBs. Let us now have a look at Rajya Sainik Boards.

In 1919, the District Soldiers, Sailors & Airmen's Boards were established by the British Government in all the States, for the purpose of looking after the welfare of ex-defence personnel demobilised after the First Great War. The District Boards used to be headed by the Secretary at the district level and were contributing in a small way for the ex-servicemen's welfare. In 1972, these Boards were re-designated as Zila Sainik Boards and placed under the control of the deputy commissioners (DCs) of districts. The administrative control of the Rajya Sainik Board (RSB) and the Zila Sainik Boards (ZSB) used to be with the Chief Secretary of the state government. I will now take the example of only one state, viz. Punjab to highlight the working of the RSB.

In 1983, the Secretaries of the Zila Sainik Boards were re-designated as District Sainik Welfare Officers with the status of Class I Officers. In 1984, the Government decided to establish a separate Directorate of Sainik Welfare Punjab. The RSB has the following duties:-

- Registering names of veterans and sponsoring them to various departments against 13 per cent reserved vacancies. Deficiencies are brought to the notice of the Government.
- Providing cash awards/land, annuity and other concessions' to the gallantry award winners.
- Granting financial assistance to the families of killed/disabled defence personnel.
- Sanctioning War Jagirs to the families whose son/sons serve in defence forces of the country.
- Providing financial assistance to veterans suffering from chronic diseases like T.B., cancer and major surgeries out of the Punjab Amalgamated Fund.
- Administering the Punjab Amalgamated Fund and disbursing about Rs. 45.00 lakh (approximately) each year for the welfare of veterans.
- Providing grants to veterans for the marriage of their daughters.
- Organising Flag Day Fund collections.
- Organising rallies for veterans, with a view to listen to their grievances and to educate them about new facilities given to them.
- Assisting veterans in resolving their pensionary or other service related problems and looking after war widows and wards of the battle casualties.

- Providing coaching facilities for selected wards of veterans for appearing in various competitive tests.
- Rehabilitation of army deserters.
- Reservation of seats in educational institutions.
- Liaison with recruiting agencies, army and command headquarters and other departments of Government.
- Holding of Rajya Sainik Board and Amalgamated Fund Committee meetings.
- Nominations of Zila Sainik Boards.
- Admission into RIMC and Sainik Schools.
- Territorial Army matters.
- Maintenance of War Memorials.
- Providing basic computer education to veterans, widows and their wards for their gainful employment through the Sainik Vocational Training Centres being run at district levels

While all this looks impressive, it would be clear that none of them deal with any 'nation building' tasks. Their focus is only on a minuscule portion of veterans and not the veterans as a whole. There is also no plan or scheme to amalgamate the veterans in to civil society. I am quite certain that this situation prevails in all states, in varying degrees.

Let me now briefly focus on the veterans' organisation in USA, as a comparison.The United States has the most comprehensive system of assistance for veterans of any nation in the world. The Veterans Administration (VA) was established in 1930, by the Congress enacting a law. The responsibilities and benefits programmes of the Veterans Administration grew enormously during the following six decades. World War II resulted in not only a vast increase in the veteran population, but also in large number of new benefits enacted by the Congress for veterans of the war. The World War II GI Bill, signed into law on June 22, 1944, is said to have had more impact on the American way of life than any other law in the previous 100 years. Further educational assistance acts were passed for the benefit of veterans of the Korean Conflict, the Vietnam Era, Persian Gulf War, and the All-Volunteer Force.

The Department of Veterans Affairs (VA) was established as a Cabinet-level position on March 15, 1989. President Bush hailed the creation of the new Department saying, "There is only one place for the veterans of America, in the Cabinet Room, at the table with the President of the United States of America."

The VA health care system has grown from 54 hospitals in 1930, to include 171 medical centres; more than 350 out patient, community, and outreach clinics; 126 nursing home care units; and 35 domiciliaries. VA health care facilities provide a broad spectrum of medical, surgical and rehabilitative care. For Financial Year 2009, the budget proposal for the veterans is $ 93.7 billion. There are many other details, but it is not possible to include them here.

SUGGESTED CHANGES

At the Army Level

Let me now make some recommendations. First, what can the army do? Soldiers make a life-long commitment to the army. Consequently, there is need to maintain a continued sense of belonging. The army needs to foster these ties and provide adequate opportunities to continue the link between the veterans and serving personnel, in terms of camaraderie, consultations, concern for their welfare and support. Our personnel need a sense of belonging even more after they leave the army. One answer is to set up an Army Association, with chapters in each state. The Indian Air Force already has an Air Force Association. The Navy too has The Naval Foundation.

There is also a need for the army to aggressively market the competence of all ranks of the army. The army has a major shortage, but for some reason I am unable to fathom, the army avoids using the services of retired officers to fill at least some of the voids. Such suggestions are superficially heard, but dismissed as impracticable. Can retired officers fill vacancies in training establishments, static headquarters, specialised technical appointments in projects where continuity is a major requirement, like war gaming or components evolving various systems for net-centric warfare and so on? I strongly feel they can. There are other places too, where the veterans can be employed within the army. Some of the major inhibitions of the army are considerations of seniority, demands for equal facilities, lack of control and so on. All these are minor issues, easily resolvable. One solution is to employ the veterans on a contractual basis for specified periods. I would urge the army to give this a serious thought.

At Government Level

Secondly, at the government level, there is an imperative need to ensure that the large manpower of highly disciplined, motivated and skilled personnel that leaves the army every year is gainfully utilised during the

productive years of the soldiers, when they have maximum potential to contribute their worth. An assured placement after leaving the army would provide greater confidence to officers and soldiers and this knowledge itself would motivate them to do better even in service. It will also be a major incentive to attract better individuals to the army, which is reeling under major shortages of officers today. Massive media effort needs to be generated to make both the private and public sectors change their attitude to soldiers and employ them, in accordance with their considerable and varied skills.

Nation Building Tasks

Thirdly and perhaps most importantly, is the need for the central and state governments to involve the veterans in nation building tasks. Precedents already exist, where the contributions of the army have been outstanding. Training imparted in the Services to the officers, Junior Commissioned Officers (JCO's) and men, not only makes them good leaders and soldiers, but inculcates skills and more importantly values which they imbibe during their service, which make them ideal material for carrying out developmental activities and employment in developmental schemes.

The need is to set up hierarchical organisations, on the lines of army structures, for carrying out developmental activities in towns and villages. The manning of the organisation at successive levels should largely be by the veterans.

The examples of Land Armies, which did excellent work in Karnataka and Madhya Pradesh, can be cited. The Karnataka Land Army was constituted in the 1970's to tackle the problems of unemployed youth of rural areas. The main objectives of the scheme were:-

(a) To inculcate a sense of discipline in youth.
(b) To train them in the art of working together as a body.
(c) To make use of the labour force thus available, for the creation of permanent productive assets.

The land army had General P P Kumaramangalam, former Chief of Army Staff, as the Chairman with Brigadier VP Naib as the Managing Director, and a few Joint Directors, who were in charge of Administration, Works, Project Heads and so on. All jobs were given to military officers, so as to give the necessary quasi-military character and because they had imagination, knowledge, leadership, drive and were capable of achieving results, instead of looking over their shoulders for instructions.

A typical example was the preparation of the project plan for Bidar District. This task was given to both the Council of Scientific and Industrial Research (CSIR) and to the Land Army. CSIR produced three bulky volumes on costly paper, costing a large sum and proposed expenditure of Rs nine lakh for a thorough aerial survey and photo-interpretation thereafter. On the other hand, the Land Army produced a project report, which was a workable plan at the reasonable cost of Rs. 1500.00 after a physical survey of the land.

The Karnataka Land Army was successful in eliminating the weaknesses of existing implementation agencies and fighting the evil of the prevailing corrupt and slow system, but against heavy odds. The work of the Land Army was characterised by speed, economy and high technical standards, largely because of the training of the field staff on military lines in developing the qualities of leadership, integrity and devotion to duty, as well as technical competence in the field. The Land Army, in their initial five years, till March 1978 handled works having a capital outlay of Rs 2,023.50 lakh and operated in 17 districts of Karnataka, most of them in remote areas. Instead of contractors, only local people were employed. This also resulted in direct benefits to their own communities.

In Madhya Pradesh too, the Land Army was organised to tackle the problem of mounting unemployment and deteriorating moral values in our rural youth. The first Land Army battalion commenced functioning in December 1980 in Rewa and gradually increased its presence in 24 districts.

The experience of these two Land Armies can be used in many schemes, including soil reclamation, forestry, adult education, road construction, housing, hygiene and sanitation and flood control measures. General Kumaramangalam, while commenting on the Land Army Organisation had stated as under: -

"Our main asset was the practical application of the knowledge of man-management we had acquired during our service. The officers from the armed forces have one distinct advantage over bureaucrats. They are trained to take decisions and habituated to see that orders from these decisions are carried out. The bureaucrats do not like taking decisions, and once orders are passed, take little care in implementing them".

The positive traits of the veterans do need to be exploited for the good of the nation. Although the bulk of our population is still rural-based, our villages have not developed, are poor, and lack even the basic necessities of life. The employment of veterans in projects, which would substantially enhance infrastructure and bring prosperity to our villages would be greatly beneficial and would add to 'nation building'.

The National Rural Employment Guarantee Scheme that has been recently launched is one scheme where the veterans can play a major role. The scheme promises that one member from each of the country's 60 million rural households is guaranteed 100 days of work each year. They will receive a minimum wage of 60 rupees ($1.35) or an unemployment allowance if there is no work. It is the biggest social security net ever provided in India. But will it succeed or go the same way as many major schemes launched in the past?

A large number of schemes and programmes initiated by the Government in the past, for employment, housing,

area development and so on, like Jawahar Rozgar Yojna, Million Wells Scheme, Self-employment and Entrepreneurial Development Programme, Ganga Kalyan Yojna, Indira Awas Yojna and so on have largely been failures. It is not that the schemes were flawed, but they failed on account of lack of effective monitoring, implementation and accountability. The new schemes will also suffer the same fate, if we do not revamp the entire work force. The present implementers are the same senior and junior bureaucrats, corrupt to the core, who will siphon away all the funds and the poor rural folk will continue to remain poor. Neither will any meaningful infrastructural improvement take place. We need to create self-reliant villages and an organisation composed of veterans from top to bottom, for the effective monitoring, implementation and accountability of such schemes for rural areas. I strongly make a plea that special purpose vehicles like the Land Armies of the past be formed.

Over a year back, while attending the Hindustan Times Summit, I had suggested this to Mrs Sonia Gandhi and she had stated that it was a good idea and that she would convey it to the Prime Minister. Later, I sent off a detailed proposal to both Mrs Gandhi and to the Prime Minister. The latter did reply, but I do not see anyone implementing the proposal. Perhaps the limitless greed of the concerned officials has again come in the way and stopped the proposal in its tracks!

Such an organisation need not be for rural areas only. It can contribute positively in urban development too. After all, there could not be better examples than the well-administered military cantonments and military stations vis-à-vis towns and cities administered by municipalities.

Commenting on veterans, General S Padmanabhan, the former Chief of Army Staff, had stated in his Message in a book on the subject “the book will not only highlight to the government and NGO’s the gross under utilisation of a vast human resource (veterans), but also enable them to adopt innovative methods to garner this valuable resource towards nation building and development”. I hope what General Padmanabhan had stated, does in fact come about.

Suggestions for the Veterans

Having highlighted what the three concerned institutions in our country – the defence forces, the central government and the state governments are doing or not doing about veterans, it would be appropriate to say a few words about the veterans themselves.

In the later years of my service in the army, I always felt and sometimes articulated that some veterans were the biggest pain in the neck for serving persons. After I demitted service and joined the ranks of the veterans, this view, instead of diminishing, has been further reinforced. Aspirations of some veterans are akin to the proverbial bottomless well, for they seem never to be satisfied. Perhaps there are good reasons for this, which my limited intelligence is unable to comprehend. Be as it may, let me make a few quick points.

The first is that the veterans must accept the fact that they are no longer serving personnel and consequently there has to be a reduction, if not elimination of the perks and privileges they had enjoyed earlier. The earliest this sinks in, the better would be your quality of life as well as peace of mind. You must have expectations, of course, but these must be commensurate with your new station in life.

My second point relates to your behaviour and life style as a veteran. In the defence forces, you had led an extremely active life, working hard, ready for operations at short notice, training hard, participating in sports and partying hard when time and resources permitted. Can you suddenly change and become a civilian? Obviously not! Therefore, remain a soldier, sailor or airman and do not succumb, whether it is in the field of deportment, character, turnout, adhering to time, disciplined approach to life, obeying orders and so on. There is a lot of respect for soldiers, both serving and veterans amongst the citizens of this country. We need to be worthy of this respect by our actions.

Thirdly, ‘Izzat’ or honour is probably the most important single value that a soldier seeks. It must continue to occupy that position of pre-eminence when you join the ranks of the veterans. I would also urge the bureaucracy and people from other walks of life to bear in mind the importance soldiers of all categories attach to this.

Fourthly, veterans must find their rightful place in national development. Veterans the world over have been accepted as important pillars of the nations polity. Although ‘nation building’ by the veterans finds acceptability amongst the public, there is also hostility. A large number of veterans have done highly creditable work in reviving and turning around dying or dead organisations, both in the public and private sectors. They have found opposition from bureaucrats and technocrats, who feel the veterans are intruding in their domains. This hostility needs to be contained in the interest of the nation. Veterans need to rise to meet the aspiration of millions of our poor people. Merely living in the small realm of your own fraternity will make you both tired and retired, when in actuality you are neither.

Fifthly, get united. In the milieu in which we live, your voice will only be heard if it is the voice of the group, not disparate individuals. It should not be like this, but the sad fact is that it is.

Many veterans, without waiting for plans and schemes to be floated by governments, have commenced working for the people on their own or by forming or joining NGO’s, which are carrying out useful work for the betterment of those of our compatriots who have needs or come under the category of “weaker sections of society”. I know many who are deeply involved in such welfare work, in both cities and villages. I am myself heading an institution – the War Wounded Foundation – which has been set up to assist our comrades who have been disabled in war or war like conflicts. You too can choose a cause, which appeals to you.

My last suggestion to the veterans is to remain busy and do so in the area that appeals to you most. It is the

panacea for a healthy life. Please remember that there is also a world beyond the golf course, which beckons you. According to the Indian way of life, “karma is dharma”. It is as much applicable to the veterans as to every one else. So do your dharma for the nation and the society.

CONCLUSION

Personnel of the defence forces learn many skills during their service. These include leadership skills of a very high order, even amongst our non-commissioned officers (NCO’s). Depending on their Arms and Corps, as well as their trades and specialisations, they have a large variety of skills, both technical and non-technical.

It is unfortunate that the Nation has been unable to utilise these considerable skills and talents, because of lack of will and focus, as well as suitable organisations, which can voice their aspirations and bring forth their availability to the attention of the policy makers of our country, as also to the captains of our industry. The Department of Ex-servicemen Welfare is supposed to do this, but our experience with this organisation or its earlier ‘avatar’ has been less than satisfactory.

In the existing environment in the country, besides their talents and skills, the veterans bring with them a high degree of dedication to duty, a great amount of hard work and diligent application, obedience to authority, impartiality, secularism of the highest level and a culture of sacrifice.

Having served the country in an exemplary manner, in all types of terrain and in highly adverse environments, they are both physically and mentally tough. They are therefore ideal material to be employed in rural and other difficult areas, where their civilian counterparts do not want to venture.

A few decades back, when we were a younger democracy and when the stranglehold of the bureaucracy was not all pervasive, as it is today, the veterans were utilised in varied nation building efforts, in a number of states. Notable amongst these were Karnataka and Madhya Pradesh, where the veterans, grouped into organisations called ‘land armies’ contributed considerably to nation building.

Over the years, our rural sector has languished, resulting in a massive movement from rural to urban areas on the one hand, and a diminishing agriculture growth on the other, coupled with continuing poverty and exploitation of the rural land-less and other inhabitants of our villages. Today, our political leadership is alive to this major problem. A number of rural upliftment schemes have been launched. While the aim is commendable and resources in terms of funds have been allocated, unless there are dedicated people to implement these schemes, they are unlikely to succeed. Earlier schemes for the rural sector have not succeeded, not because the schemes were inadequate, but because the people who had to implement them were either incapable or unwilling to implement them, or had their own vested interest in siphoning off the funds. Unless the work force is changed, the results will again be the same. It is here that the veterans would not only add a touch of dedication and diligence, but a fresh approach, steeped in the defence forces culture of task-accomplishment in the allocated time frame.

The young students and youth take inspiration from the elders and in many cases, the veterans act as role models. Veterans are a large reservoir and resource of disciplined, experienced and trained human capital that can be effectively used for nation building projects. The officers, as well as the rank and file from the defence forces retire at comparatively younger ages, and can be easily absorbed, after a short re-orientation training, both in government jobs, on contractual basis, or in NGOs (Non-Government Organisations), in developmental projects being undertaken in rural, semi-urban or urban areas.

Let me end this piece with a quote, appropriately dedicated to the personnel of the defence forces:

“It’s the Soldier, more than the reporter,
who has given us the freedom of the press.
It’s the Soldier, more than the poet,
who has given us the freedom of speech.
It’s the Soldier, more than the politician,
that ensures our right to Life, Freedom and the
Pursuit of Happiness.
It’s the Soldier who salutes the flag,
who serves beneath the flag,
and
whose coffin is draped by the flag.

..*Text of the talk delivered at Chandigarh on 14 March 2008.

****Lieutenant General Vijay Oberoi, PVSM, AVSM, VSM** retired as the Vice Chief of Army Staff in September 2001. He had set up the Centre for Land Warfare Studies as Director, and is presently the President of the War Wounded Foundation.
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China's Economic Development and the Future

Mr Zheng Xinli

Introduction

The Communist Party of China (CPU) convened its 17th National congress in October 2007. The report delivered by General Secretary Hu Jintao at the congress on behalf of the CPU Central Committee put forward new requirements for attaining the goal of building a moderately prosperous society in all respects by 2020. It also introduced strategies, principles and policies for China's economic, political, cultural and social development in the next few years. The Scientific Outlook Development was enshrined in the report as an important guiding principle for China's economic and social development. It called on us to observe the following principles while applying the Scientific Outlook on Development:-

(a) we must always give top priority to development. Development is the key to resolving all China's problems. Without development, we will not be able to achieve modernization. Development enables China to provide for its more than 1 billion people, better undertake its international obligations and make greater contributions to the world economy.
(b) we must put people first as we seek development. We should see to it that development is for the people, by the people and with the people sharing in its fruits. We should respect the democratic rights of the people, give play to the people's creativity, safeguard the people's economic, political, cultural and social interests, seek common prosperity and promote all-round development of the people.
(c) we must pursue sustainable development. We should harmonize economic growth with the population, resources and the environment. We should adopt an enlightened approach to development that results in expanded production, a better life and sound ecological and environmental conditions and build a resource-conserving and environment-friendly society so that our people will live and work under sound ecological and environmental conditions and our economy and society will develop in a sustainable way.
(d) we must persist in overall consideration. Overall consideration is a basic approach to balancing the interests of people from all walks of life. We should balance urban and rural development, development among regions, economic and social development, relations between man and nature, and domestic development and opening up to the outside world, thus striking a balance in all links and aspects of China's economic, political and cultural development. New Objectives for China's Development

New Objectives for China's Development

The 17th CPC National Congress set new objectives for China's development – qudrupling the per-capita GDP of the year 2000, by 2020. We will greatly enhance our capacity for independent innovation, enabling scientific and technological advancement to contribute much more to economic growth and making China an innovative country. We will expand socialist democracy and better safeguard the people's rights and interests as well as social equity and justice. Chart 1 refers.

We will promote cultural development and notably enhance the cultural and ethical quality of the whole nation. We will accelerate the development of social programs and improve every aspect of the people's well-being. We will further improve the modem system of national education, expand employment and establish a basic system of social security that will cover both urban and rural residents so that everyone is assured of basic living standards. Middle-income people will make up the majority and absolute poverty will basically be eliminated. Chart 2 refers. Everyone will have access to basic medical and health services. We will promote a conservation culture and bring the discharge of major pollutants under effective control.

Industrial and Economic Development

By 2020, China will have basically accomplished industrialization, with its domestic market ranking as one of the largest in the world. It will be a country whose people are better off and enjoy markedly improved quality of life and a good environment. Its citizens will have more extensive democratic rights and show higher ethical standards. China will have better institutions in all areas and Chinese society will have greater vitality coupled with stability and unity. The country will be still more open and friendly to the outside world and make greater contributions to human civilization.

Economic development. We will seek to transform the mode of economic development. First, we adjust the demand structure to promote the transition from relying mainly on investment and export to relying on a well coordinated combination of consumption, investment and export to achieve economic growth. Second, we will adjust the product mix to promote the transition from secondary industry serving as the major driving force to primary, secondary and tertiary industries jointly driving economic growth. Third, we will increase investment in technological research and development, put in place a system for technological innovation in which enterprises play the leading role and which combines the efforts of enterprises, universities and research institutes, and promote the transition from relying heavily on increased consumption of material resources to relying mainly on advances in science and technology, improvement in the quality of the workfore and innovation in management.

We will take achieving the three transitions as an important strategic task in the next few years and a fundamental approach to promoting sound and rapid economic development. We will make every effort to propel the transitions and insure their fulfillment.

Improvement of Socialist Market Economy

We will accelerate our efforts to improve China's socialist market economy. First, we will improve our basic economic system. We will unwaveringly consolidate and develop the public sector of the economy, encourage, support and guide the development of the non-public sector, ensure equal protection of property rights and create a new situation in which all economic sectors compete on an equal footing and reinforce each other. Second, we will accelerate the formation of a modern market system that is unified and open to allow orderly competition. Third, we will deepen fiscal, taxation and financial restructuring and improve macro-economic regulation. Fourth, we will expand scope and depth to improve our open economy and will adhere to the basic state policy of opening up and expanding the economy. We will also make innovations in the way of using foreign capital; improve the structure of foreign investment utilisation and adopt comprehensive measures to maintain a basic equilibrium in the balance of payments.

Political develpment. We will make unremitting efforts to develop socialist democracy and will integrate the leadership of the Party, the position of the people as masters of the country and the rule of law. We must uphold and improve the system of people's congresses, the system of multi-party cooperation and political consultation under the leadership of the CPC, the system of regional ethnic autonomy and the system of self-governance at the primary level of society. On the basis of ensuring the people's position as masters of the country, we will expand socialist democracy, build a socialist country under the rule of law and develop socialist political civilization to enhance the vitality of the Party and the state and arouse the initiative of the people.

Cultural development. We will promote vigorous development and prosperity of socialist culture. We will stimulate cultural innovation and develop the productive forces in the field of culture. We will encourage the creation of more excellent, popular works that reflect the people's principal position in the country and their real life.

Social development. We will accelerate social development with the focus on improving people's livelihoods. We will give priority to education and turn China into a country rich in human resources. In order to create equal opportunities and foster social equity, we must first of all achieve equality in education, the starting point of life. We will implement a development strategy that promotes job creation and encourage entrepreneurship to create more employment opportunities.

Reforms in Income Distribution

We will deepen reform of the income distribution system and increase the income of urban and rural residents. A proper balance

will be struck between efficiency and equity in both primary distribution and redistribution. We will increase the share of personal income in the distribution of national income by raising remuneration for work in primary distribution. We will gradually reverse the growing income disparity. We will accelerate the establishment of a social security system covering both urban and rural residents and guarantee their basic living conditions. We will establish a basic medical and health care system and improve the health of the whole nation. We will improve social management, safeguard social stability and unity and concentrate on building a harmonious socialist society.

Pursuit of Peaceful Development

The 17th CPU National congress once again demonstrated to the world China's determination to pursue peaceful development. peaceful development is a major historical decision made by the CPC and the Chinese Government at this stage in the new century and their solemn commitment to the world. The decision to follow the path of peaceful development is based on China's national conditions, cultural traditions and the trend of the world. The essence of China's peaceful development is to secure a peaceful international environment for its development and at the same time promote and safeguard world peace through its development. China stands for enhancing international, liberalizing and facilitating world trade and investment, and eradicating various trade barriers.

China's GDP hit $ 3.378 trillion in 2007, $ 2,570 on a per-capita basis. It is projected to reach $ 7.5 trillion by 2020 based on the current prices and exchange rate, with its per-capita GDP exceeding $ 6,000. As its economy revs up, China will import more products from other countries. Its imports valued at $ 955.8 billion in 2007, up 21 percent from the precious year. In the next 12 years, China's total imports will exceed $12 trillion. This huge market belongs to the countries and companies willing to develop trade and investment relations with China. It presents unprecedented opportunities for all the other countries to develop their economies.

Development of China-India Economic Ties

Chinese and Indian economies are highly complementary. In the information industry, India offers sophisticated software services, whereas China's strength lies in hardware manufacturing. Their cooperation in this field will create new competitive advantages. Speaking of agriculture, China and India have 130 million and 160 million, respectively, hectares of cultivated land. while enjoying better rainfall, sunshine and temperature conditions than China, India lags behind China in terms of grain yield per unit area. If it adopts China's agricultural technology including improved crop strains, India will be able to increase its grain output and make its agricultural exports to China more competitive. If Chinese capital, equipment, technology and building capacity in the energy, iron and steel and transportation sectors are combined with Indian market demands and labor resources, India will be able to accelerate the development of these key industrial sectors and its infrastructure. China's textiles and mechanical products are highly competitive in the international market. It can help India boost the development of related industries and expand employment by exporting products to or setting up factories in India. The two countries also have great potential for cooperation in the fields of science and technology and education. Their cooperation in nuclear power technology provides a telling example.

In conclusion, the development of China-India economic exchanges and cooperation will help bring about mutually beneficial and win-win results for the two countries and step up the modernization of their economies.

.Text of the talk delivered by Mr Zheng Xinli, Deputy Chief of Policy Research, Central Committee of the Communist Party of China at the USI on 19 February 2008.
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China's Military Modernisation: A Perspective

Major General S V Thapliyal, Sm (Retd)*

Introduction

China has stated its intentions and allocated resources to pursue a broad-based military build-up encompassing force-wise professionalisation; improved training; more robust, realistic joint exercises; and the accelerated acquisition of modern weapons. The intelligence community estimates, however, that China will take until the end of this decade or later for its military modernisation programme to produce a modern force capable of defeating a moderate-size adversary. Recognising this deficiency, China's leaders have placed a near-term emphasis on asymmetric programmes and systems to leverage China's advantages while exploiting the perceived vulnerabilities of potential opponents – so –called Assassin's Mace programmes. Although military modernisation figured the last among Deng Xiaoping's Four Modernisations, there are increasing signs that China has embarked on its military modernisation to turn its people's army into a modern force.

Chinese have long realised that technology is the cutting edge in modern combat. Accordingly, it has embarked on an ambitious programme to revamp its technological capability. This process is likely to take between fifteen to twenty years. Evidence suggests the PLA is engaged in a sustained effort to interdict, at long ranges, aircraft carriers and expeditionary strike groups that might deploy in the western Pacific. Following the experience of US intervention with carrier battle groups during the 1995 and 1996 Taiwan Strait crises, there are signs that the Chinese military has invested in research, development and technology acquisition oriented towards anti-carrier operations. Similarly, China's placement of long range SAM systems capable of providing coverage over Taiwan's airspace, combined with expansion of SRBM and amphibious forces, is introducing a destabilising capability.

China's Military Doctrine

China's defence modernisation is guided by the overall principles of national strategy, which have been defined and re-defined in the last more than five decades. In general, in the last two decades, the national strategy of China is to comprehensively modernise the economy in order to usher in a "well-off society" and raise "comprehensive national strength" by 2020. Following this, the overall national policy perspectives included an emphasis on quadrupling gross domestic product to reach the current economic level of the developed countries, promoting science and technology potential of the country and bridging the gap with the advanced western countries. The Chinese Academy of Social Sciences in January 2000 prepared a report that suggested that China ranked 6th in global standing in terms of comprehensive national strength after the United States of America, the UK, Russia, France and Germany. It is marginally ahead of Japan while India is placed last of the ten, below Canada and South Korea. According to this report, China ranks fourth, fifth and sixth, respectively, in military and diplomatic capabilities, and gross domestic product indicators in the world.

To pursue these objectives, China launched the four modernisation programmes in 1978, to encompass agriculture, industry, science and technology and national defence in that order of priority. Externally, this policy meant building bridges with the major powers for smooth investments and technology flows and improving relations with neighbours for peace and tranquility and developing links with the developing countries for sustained supplies of raw materials for China's burgeoning industrial growth rates. Peace and development then became the watchwords of the Chinese leadership. Nevertheless, in conjunction with the above steps, China has undertaken a concerted military modernisation programme in the last two decades to protect its sovereignty claims and territorial integrity. The defence policy of China includes its changing threat perception, intentions and capabilities. In the People's War Strategy, soon, 'four firsts' became one of the classical expressions. These are :-

(a) 'Human factor' came first in the relationship between weapons and men;
(b) Politics came first in the relationship between political work and other works;

(c) Ideology came first in the relationship between routine work and ideological work;
(d) 'Living thought' came first in the relationship between book learning and practical application.
(e) These principles are also expressed in the following :-

(i) Mind is superior to matter,

(ii) Thought is more powerful than weapons,

(iii) Doctrine overcomes strength.

Modernisation Strategy

(a) Operation Iraqi Freedom is being studied to incorporate new ideas including rethinking assumptions about value of long range precision strikes, independent of ground forces. In a Taiwan conflict scenario, integration of psychological operations with air and rapid ground operations and improving joint operations capability by developing advance C4ISR systems and improving inter service cooperation.
(b) Increased interaction and cooperation with foreign militaries to improve political and military ties.

(c) China's extensive and well established ballistic missile industrial infrastructure continues to concentrate on replacing liquid propellant missiles with mobile solid propellant ones, reflecting concerns for survivability, maintenance and reliability and developing high priority ICBMs for theatre and strategic missions.
(d) Research and development to produce a variety of systems including tactical and special purpose (aerial refuelling tankers, airborne early warning and electronic countermeasures) aircraft, as well as modern turbofan engine technology.

(e) Building modern and combat capable surface combatants, submarines and amphibious vessels.
(f) Producing advanced armoured systems, upgrade older models and develop next generation missiles.

Modernisation Parameters

Area Denial Capability

China is developing forces and concepts focused on denying an adversary the ability to deploy to locations from which it can conduct military operations. Increasingly, China's area denial forces overlap, providing multiple layers of offensive capability. PLA planners are focussed on targeting surface ships and submarines at long ranges. Analysis of current and projected force structure improvements suggest that in the near term, China is seeking the capacity to hold surface ships at risk through a layered defence that reaches out to the 'second island chain'. China has expressed interest in developing naval anti access capabilities that use a comprehensive C4ISR network to direct and coordinate naval, air, space and missile forces.

One area of apparent investment involves the pursuit of medium-range ballistic missiles, an extensive C4ISR system for geo-location of targets, and onboard guidance systems for terminal homing to strike surface ships on the high seas or their onshore support infrastructure. This capability would have particular significance for regional stability, owing to the pre-emptive and coercive options that it would provide China's leaders.

A layered system to achieve local sea denial would also employ submarines, maritime strike aircraft and modern surface combatants equipped with anti-ship cruise missiles (ASCMs). China's development of numerous varieties of mines, its acquisition of the KILO, SONG, and YUAN class diesel submarines and development of the SHANG class Nuclear Submarine illustrate the importance the PLA is placing on undersea warfare in its pursuit of sea denial. The purchase of two new Russian SOVREMENNYY II class Destroyers and indigenous production of the LUYANG I/ LUYANG II Destroyers equipped with long range ASCM and SAM systems demonstrate a continuing emphasis on improving anti-surface warfare capabilities combined with mobile, wide area air control.

Building Capability for Precision Strikes

PLA planners have observed the primacy of precision strikes in modern warfare and are investing in both the offensive and defensive elements of this emerging regime. China is pursuing an array of improved ISR assets ranging from UAVs, constellations of various satellites, and more 'informationalised' special operations forces. Such forces could provide targeting data for long-range precision strikes linked by more robust communication systems.

To carryout precision strikes, China in the near future will have the following :-

(a) Short Range Ballistic Missiles (SRBMs) (conventionally armed).
(b) Land Attack Cruise Missiles (LACMs) (conventionally armed).
(c) Air-to-Surface Missiles (ASMs)
(d) Anti-Ship Cruise Missiles (ASCMs).
(e) Anti-Radiation Missiles (ARMs)
(f) Precision Artillery

Expeditionary Forces

PLA expeditionary forces include three airborne divisions, two amphibious infantry divisions, two marine brigades, about seven special operations groups and one regimental size reconnaissance element in the Second Artillery Corps (strategic rocket artillery). The capabilities of these units are steadily improving with the introduction of new equipment, improved unit-level tactics and greater coordination of joint operations.

In addition, amphibious assault missions for these forces could include; special operations to facilitate amphibious operations and disrupt communication nodes, air defence and the movement of reserve forces reacting to amphibious operations, airborne assaults to seize airfields for follow-on infantry forces; and, reconnaissance to provide targeting information and battle damage assessments. PLA ground forces in the Nanjing and Guangzhou Military Regions have received upgraded amphibious armour and other vehicles, such as tanks and armoured personnel carriers, and may deploy additional armoured vehicles and air cushioned troop vehicles to improve lethality and speed for seaborne assaults. Airborne forces would probably have priority use of the newly purchased IL-76/CANDIDs from Russia, and may acquire modern, armoured vehicles that can be airdropped. The quality and quantity of army aviation training has increased in recent years. Army aviation regiments actively study and explore new fighting tactics and training methods to increase their joint operations capability.

Expanding Air Defence

The PLA has shifted from point defence of key military, industrial, and political targets to a new Joint Anti-Air Raid Campaign doctrine based on a modern, integrated air defence system capable of effective offensive counter air (OCA) and defensive counter air (DCA) operations. Under this doctrine, the PLA will use aircraft, surface to surface missiles, long range artillery, special operations forces, naval forces and guerrilla units to destroy an enemy's ability to conduct offensive air operations and provide comprehensive defence of PRC airspace.

Enhanced Reconnaissance Capability

China participated in the China-Brazil Earth Resources Satellite (CBERS) programme with the CBERS-1 and CBERS-2 remote

sensing satellites. These satellites can take 20 metre resolution images in swaths exceeding 100 kilometres and transmit these digital images to earth stations. The programme will continue with follow-on satellites CBERS-2B, CBERS-3 and CBERS-4, which reportedly increase camera resolution substantially.

China is interested in acquiring a disaster environmental/ monitoring satellite constellation called Huanjing. Phase 1 of the programme calls for three satellites, two of which are equipped for visible, infrared, and multi-spectral imaging while the third will possess a Synthetic Aperture Radar (SAR) to see through weather. Phase 2 of the Huanjing programme allows for eight satellites (four imaging and four SAR) in orbit simultaneously.

In the next decade, Beijing most likely will field radar, ocean surveillance, and high resolution photo reconnaissance satellites. China will eventually deploy advanced imagery, reconnaissance and earth resource systems with military applications. In the interim, China probably will supplement existing coverage with commercial SPOT, LANDSAT, RADARSAT, Ikonos, and Russian satellite imagery.

Exploiting Information Warfare

The PLA considers pro-active strategy to be the most important requirement for information warfare to destroy or disrupt an adversary's capability to receive and process data. Launched mainly by remote combat and covert methods, the PLA could employ information warfare pre-emptively to gain the initiative in a crisis.

Specified information warfare objectives include the targeting and destruction of an enemy's command system, shortening the duration of war, minimising casualties on both sides, enhancing operational efficiency, reducing effects on domestic population and gaining support from the international community.

The PLA's information warfare practices also reflect investment in electronic countermeasures and defence against electronic attack (e.g. electronic and infrared decoys, angle reflectors, and false target generators).

Conclusion

Chinese military experts have concluded that the next 10 to 15 years present a critical strategic window of opportunity for the PLA. During this window an unprecedented digital divide will appear between the developed and developing countries and the gap between informationisation and mechanisation will become even wider. The PLA cannot wait until mechanisation is completed and thereby miss this window, for the price of a future catch-up in informationisation will be too high. However, if China plunges all of its resources into informationisation, while still lacking mechanised power, traditional firepower, and such combat platforms and tanks, airplanes and ships, the PLA will still lack combat capability.

Therefore, the best choice is clearly for the PLA to implement mechanisation and informationisation simultaneously, with a special emphasis on the latter. By using informationisation to drive mechanisation, China could skip some stages of mechanisation and directly enter the stage where mechanisation merges with informationisation – thereby achieving a "leaps-and-bounds" brand of development. Chinese military experts argue, "As we produce one generation, research and develop one generation and pre-search one generation, we must move on to explore one generation".

This "leaps-and-bounds" theory, which has become the linchpin of Chinese military development for twenty first century warfare, is currently reflected in a "Three-Step Strategy" for the PLA. Step one of this strategy calls for China to have developed a host of advanced weapons and systems for not only deterring but also waging a war in high-tech conditions by around 2010. Step two calls for China to accelerate the qualitative improvement of weapon systems and further optimise the organisational structure of the troops by around 2020. Indeed the "heart" of the current Revolution in Military Affairs (RMA) is said to consist in transforming the PLA's force structure. Precision guided munitions revolutionise above all a military's organisational structure (size, unit tables of organisation and equipment, etc). For example, functions that were previously performed by several troops or troop-arms can now be accomplished by one soldier using high-tech equipment, significantly reducing the size of the armed forces. Considering trends in the global RMA, the PLA's "ponderous" size and "lopsided" organisational system stand out as major problems. Finally, step three calls for China to achieve the informationisation of national defence and its Armed Forces by around 2050.

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Brahmaputra : Dam and Diversion

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“Traditionally, the Chinese people’s respect for their Emperor increases when the latter undertakes projects that no human mind can conceive of. After all, the Emperor is the Son of Heaven, and only in Heaven can projects such as the Grand Canal or the Great Wall be envisioned. It is also the role of the Emperor to bring Heaven’s vision down on earth. If he fails, his Mandate is terminated by Heaven and a Revolution or a Rebellion occurs.”

South Asia Politics : Water Wars in South Asia (2003)

Introduction

The Communists came into power in China in 1949. On 01 October 1949, from the rostrum of the Tiananmen Square, Mao addressed the masses assembled to listen to the new Emperor. He told them: “The Chinese people have stood up”. A dynasty was born. The First Generation of this dynasty also had to build a new Canal or a new Wall. Mao’s Dream was to catch up with the West and produce as much steel as UK in a few years time. It resulted in the Great Leap Forward and the death of 40 million people. Mao lost his mandate for a few years, but came back with an even greater project: a Great Proletarian Cultural Revolution which also took the lives of a few millions. Deng Xiaoping continued along the same direction with his new economic Revolution: “To become rich is Glorious”. In many ways, he succeeded and entered the Pantheon of the Great Emperors. In the next generation, the Premier Li Peng, an engineer by profession, undertook the massive Three Gorges Dam which is to produce 18,200 MW of electricity. Four new mega projects were put on the design tables as the Fourth Generation was taking over which are designed to solve the problems being faced due to imbalance in the supply of the nation’s water, energy, mineral and human resources, which are vital to a coordinated development of the national economy. They are the diversion of southern water to the north, a west-east natural gas pipeline, transmission of electricity from west to east and a railway linking Tibet with the rest of the country (already commissioned). In this article I intend to throw light on the South-North Water Diversion Scheme and study the implications of the same on India and South Asia.

South-North Water Diversion

According to the 10th Five-year Plan, water will be diverted from the south via three channels in the eastern, central and western regions, respectively. The western route will draw water from Jinsha, Yalong and the Dadu tributaries of the Yangtze River in southwest China, to the upper reaches of the Yellow River to solve water shortage in the northwestern regions. The central route is to fetch water from the Danjiangkou Reservoir on the border between Hubei and Henan provinces to Beijing and Tianjin. The eastern route will draw water at Yangzhou on the lower reaches of the Yangtze, flowing through a section of the ancient Grand Canal1 and lakes northward to reach Hebei and Tianjin. Upon completion, the project will link up the Yangtze, Huai, the Yellow River and Hai (3-H Basins) valleys, forming a network of four horizontal and three vertical2 waterways that allow a rational allocation of the country’s water resources nationwide. The project is designed to divert 40 billion cubic meters of river water a year, which equal the annual flow of the Yellow River, the second longest in China. It is expected to quench the thirst in the north and break the bottleneck hampering economic and social development in China so as to promote a sustainable social and economic development and benefit future generations, according to the Ministry of Water Resources. With the relocation of water resources, not only some 20 large and medium sized cities like Beijing, Tianjin and Shijiazhuang will be relieved of the constraints of water shortage, new economic growth points will rise up along the new waterways, especially in the western regions in a short time.

One can have an opinion on most of these projects and particularly on the gigantism of some of its components, but they are internal problems of China. However, one is not: the Brahmaputra diversion!

The Problem of Water

Hydrologically, there are two Chinas — the humid south, which includes the Yangtze River basin and everything south of it, and the north, which includes all the country north of the Yangtze basin. The south, with 700 million people, has one third of the nation’s cropland and four fifths of its water. The north, with 550 million people, has two thirds of the cropland and one fifth of the water. The water per hectare of cropland in the north is one eighth that of the south. The northern part of the country is drying out as the demand for water outstrips the supply. Water tables are falling.3 Wells are going dry. Streams are drying up, and rivers and lakes are disappearing. Under the North China Plain, a region that stretches from just north of Shanghai to well north of Beijing and produces 40 percent of China’s grain, the water table is dropping by an average of 1.5 metres per year.

Farmers in the north are faced with losses of irrigation water both from aquifer depletion and from the diversion to cities and industry. Between now and 2010, when China’s population is projected to grow by 126 million, the World Bank projects that the nation’s urban water demand will increase from 50 billion cubic meters to 80 billion, a growth of 60 percent. Industrial water demand, meanwhile, is projected to increase from 127 bcm to 206 bcm, an expansion of 62 percent. In much of northern China, this growing demand for water can be satisfied only by taking irrigation water from agriculture.4 What happens to irrigation water supplies directly affects China’s agricultural prospect. Whereas less than 15 percent of the US grain harvest comes from irrigated land, in China it is close to 70 percent.

In the competition for water between cities, industry, and agriculture, the economics of water use do not favour agriculture. In China, a thousand tons of water produces one ton of wheat, worth perhaps $ 200. The same water used in industry will expand output by $14,000–70 times as much. In a country that is desperately seeking economic growth and, even more, the jobs it generates, the gain in diverting water from agriculture to industry is obvious.

Asia's Water Tower

This led the Chinese experts in Beijing to look around for water. Where did most of Asia's waters flow from? The obvious answer was not far: the Tibetan plateau, the principal watershed in Asia and the source of its ten major rivers. Tibet's waters flow down to eleven countries and are said to bring fresh water to over 85 per cent of Asia's population, approximately 50 percent of the world's population. Three of the world's ten major rivers, the Brahmaputra (or Yarlung Tsangpo in Tibet), the Yangtze and Mekong have their headwaters on the Tibetan Plateau. The other major rivers which originate in Tibet are the Huang Ho (or Yellow river), the Salween, the Arun, the Karnali, the Sutlej and the Indus. About 90 per cent of their run off flows downstream to China, India, Bangladesh, Nepal, Pakistan, Thailand, Myanmar, Laos, Cambodia and Vietnam. For us in India, the main concern is the Brahmaputra, the Indus, and the Sutlej, whose waters give life to more than 500 million people living downstream.

Himalyan Glaciers

It is roughly estimated that 10-20 per cent of the Himalayan region is covered by glacial ice while an additional area ranging from 30-40 per cent has seasonal snow cover. Himalayan glaciers cover around 100,000 square kilometers and store about 12,000 cubic km of fresh water: the most incredible water tank one can imagine. The perennial run of the rivers originating from these glaciers also result in a stable flow of water to regions which are dominated by monsoon rainfall (with rain pouring for only a few months of the year). Consequently, the Tibetan rivers, independent of seasonal precipitation patterns, are an important factor in sustaining hydrological regimes of South Asia.

The Yarlung Tsangpo

The Yarlung Tsangpo or Brahmaputra as it is known in India, has an immense bearing on the life of hundreds of millions in the sub-continent. It is the largest river on the Tibetan plateau, originating from a glacier near Mt Kailash. It is considered to be the highest river on earth with an average altitude of 4,000 metres. It runs 2,057 kms in Tibet before flowing into India, where it becomes the Brahmaputra. One of its interesting characteristics is the sharp U turn it takes at the proximity of Mt. Namcha Barwa (7,782 metres) near the Indian border. The two larger tributaries of the Tsangpo are the Kyichu (or Lhasa River) and the Nyangchu. Near Shigatse region, the Yarlung valley is 20-30 kms wide. This area with its sand dunes and lakes is the cradle of a two thousand year-old civilization. China's Tibet, a Chinese magazine describes the scenery: "The complex and unique geographic and climatic conditions created by this great river provide Tibet with a wide array of wildlife. Black-necked cranes, Tibetan antelopes, wild Tibetan donkeys, sheep and Tibetan gazelles are among the larger animals found in the river valley.5" In Tibet, the river is often navigable, local people use coracles (made of yak hide and bamboo) to cross it. The Yarlung Tsangpo enters India in Siang district of Arunachal Pradesh. When it penetrates Assam, it is joined by two other rivers (the Dihang and Lohit).

Significance of the Brahmaputra Basin

The Brahmaputra has always been considered as the very soul of the State by Assamese poets and ordinary people alike. Its valley has fertile farmland, with large areas covered with Sal forests, a valuable tree that yields resins. Crops of tea, rice and jute bring wealth to the region. River floods over much of the valley in the rainy season providing natural irrigation to rice growers. The rare one-horned rhinoceros, extinct in other parts of the world, is still found in Assam, along with tigers, elephants and a large variety of fish. Around the settlements in the Brahmaputra Valley many fruit-bearing trees like mango, jackfruit and papaya are easily grown. Entering Bangladesh, the river unites with the Ganga and is known as the Padma, before becoming the Meghna-Brahmaputra after merging with the river Meghna. Finally it divides into hundreds of channels to form a vast delta which flows into the Bay of Bengal.

The Grand Canyon

But let us come back to the Tibetan plateau. When the Tsangpo reaches its easternmost point in Tibet, it takes a sharp U turn known as the Great Bend. Only recently it has been found that the Yarlung Tsangpo gorge forms the longest and deepest canyon in the world.

For the first time in May 1994, Xinhua News Agency mentioned about the length and depth of the canyon: "Chinese geologists claim that a remote Tibetan canyon is the world's largest, bigger and deeper than the Grand Canyon. The Yarlung Zangbo Canyon, in the vast Himalayan range that encircles China, averages 3.1 miles (5 kms) in depth and extends 198 miles (317 kms) in length. The Grand Canyon in the southwestern US state of Arizona is, by comparison, a mere 1 mile (1.6 kms) deep but 217 miles (347kms) long, with a width of between 4 and 12 miles. Scientists found that the canyon located in the Himalayan range, averages 5,000 metres in depth, with the deepest section reaching 5,382 metres.6"

A few years later, it was found that near Mt. Namcha Barwa (7,756 metres), the Tsangpo Gorge is eight times as steep and three times as large as the Colorado in the Grand Canyon. It is in the Great Bend that China is planning one of the most important components of the 'western route' diversion scheme.

The Project

The Tsangpo project will have two components: one will be the construction of the world's largest hydroelectric plant that would generate twice the electricity produced by Three Gorges Dam. Today, the biggest power station in the world is located in Itaipu in Brazil: it has a total installed capacity of 12,600 MW. The Three Gorges Dam on the Yangtze River (PDC is 2009) will have a 18,200 MW capacity. The hydroelectric plant on the Great Bend of Yarlung Tsangpo will dwarf all these projects with a planned capacity of 40,000 MW. The second component of the project will be the diversion of the waters of the Tsangpo which will be pumped northward across hundreds of kilometres of mountainous regions to China's northwestern provinces of Xinjiang and Gansu. For the Chinese leaders, it is enough to know that the Tsangpo river tumbles down over 3,000 metres in less than 200 kms. This gives the gorge one of the greatest hydropower potentials available in the world. It makes emperors dream.

For the Tibetans, it is one of the most pristine regions of their country. They consider the area around the Bend as the home of the Goddess Dorjee Pagmo, Tibet's protecting Deity. Many believe that this place, locally known as Pemakö is the sacred realm often referred to in their scriptures: The Last Hidden Shangrila. For South Asia and more particularly for India, the enormity of the scheme and its closeness to the Indian border 7 cannot be ignored. It is not only the sheer enormity of the project which has to be considered, but the fact that if it is accomplished, it will have ominous consequences for millions of people downstream. Their basic need for water and their survival would be endangered. Once Ismail Serageldin, a former Senior Vice President of World Bank said: "The next World War will be over water." China's green light for the project could be considered by South Asia as a declaration of war.

Media Reports

The first (and almost only time) that the matter was reported in the Indian Press was in June 1997 when Outlook magazine wrote a piece entitled: "China proposes to divert the Brahmaputra at source to green the arid Gobi desert." The magazine wrote: "The initial report — that the Chinese were planning to raise their food output in the decades ahead — was hardly stop-press material. But as details leaked out,policymakers in India and Bangladesh felt a shiver of apprehension: the Chinese proposed to divert the Brahmaputra river at source; in Tibet, even set off a peaceful nuclear explosion, to serve their purpose."

At that time, the only thing that a former director, Asian Development Bank said was that under international law, no one could stop China and that "The Chinese government has equal rights to the use of the river." However, Outlook revealed that "the concern in Assam and Bangladesh is understandable. The Luit - as the river [Brahmaputra] is locally called - figures prominently in the folklore and culture of Assam and the Northeast; has been the theme of countless Bhupen Hazarika songs. The river is crucial to the economy of the entire region, where the concept of irrigation through ground water sources has not really taken off."

In the coming months, more publicity was given to the dam as well as the diversion proposals. In September 1997, Agence France Press in Beijing reported: "Three experts propose construction of giant dam in Tibet". It stated: "After a long experience of exploration on the site, we believe that the project could begin to be included in the agenda of the concerned department". The project was also mentioned in news briefs in the China Daily Business Weekly (21 September 1997) and the International Water Power and Dam Construction Monthly (November 1997). In January 1998, the German TV channel ZDF presented a feature on the Yarlung Tsangpo project, in a programme entitled "Die Welt" [The World]. The Chief Planner, Professor Chen Chuanyu was interviewed. He described the plan to drill a 15 km (9.3 miles) tunnel through the Himalayas to divert the water before the U turn and direct it to the other end of the bend. This would shorten the distance of the approximately 3,000 metres altitude drop from 200 kms to just 15 kms. He explained that the hydropower potential of 40,000 MW could be used to pump water to northwest China over 800 kms away.

National Geographic Expedition

An interesting aspect briefly mentioned is that this area known to the Tibetans as Pemakö was considered to be a sacred area, rarely visited by outsiders. The difficulty of access to this unexplored region must have created one of the greatest obstacles for the engineers in Beijing. At the end of the 90's, the Chinese government decided to permit foreigners to explore the Grand Canyon. The well-known National Geographic expedition, with ultra sophisticated materials and highly professional rafters made the first discoveries. Though it resulted in the death of an American kayaker, Doug Gordou in October 1998, it permitted a far greater knowledge in several previously unexplored parts of the gorges. Books and video footage of this expedition (as well as subsequent ones) certainly helped the Chinese planners to get a more accurate picture of the difficulty of the terrain (as well as the potentialities).

The opening of the area to adventure tourism was certainly a step of the preparatory work to find an approach way for dam site. In the recent years, the Chinese have been more discreet on the project, although a few reports have continued to come in. The correspondent of The Telegraph in Beijing wrote in October 2000: "Chinese leaders are drawing up plans to use nuclear explosions, in breach of the international test-ban treaty,8 to blast a tunnel through the Himalayas for the world's biggest hydroelectric plant. China will have to overcome fierce opposition from neighbouring countries who fear that the scheme could endanger the lives and livelihoods of millions of their people. Critics say that those living downstream would be at the mercy of Chinese dam officials who would be able to flood them or withhold their water supply."

The Implications

The construction of this multi-billion dollar project is tentatively scheduled to begin in 2009, the year the Three Gorges Dam is supposed to be completed. Based on mean annual flow, the Yarlung Tsangpo, constitutes 33 percent of the total flow of the Brahmaputra when it enters India. In other words, for the sub-continent it is the largest proportion of stable flow from glacial sources. The implications of a huge storage dam on the Yarlung Tsangpo and the diversion of the waters to northwestern China are multiple and far reaching for Tibet, India and Bangladesh. But most importantly, this project represents a direct threat to the people living downstream in India and Bangladesh.

For Tibet and the surrounding areas. A reservoir for a 40,000 MW capacity dam would create a huge artificial lake inundating vast areas of virgin forest within the canyon and beyond. The reservoir would stretch hundreds of kilometres upstream the Yarlung Tsangpo into the Kongpo region. Rare species of flora and fauna within the canyon (though not yet well documented) will be lost for scientific study. The Chinese authorities themselves admit that the canyon is the home for more than 60 per cent of the biological resources on the Tibetan Plateau. Although the population in the canyon is rather small, the indigenous people would suffer great hardship and be forced to leave their ancestral lands. It may not be a problem for Beijing who has 'resettled' more than one million Chinese Hans since the beginning of the construction of the Three Gorges Dam, but for the Tibetans, it would mean the loss of a last sacred place and the home of their Protecting Deity. Furthermore, Tibetans would not benefit in any way from the power produced by the hydel plant, as it would be sold to China's southern neighbours or used to send the water upstream to northwestern China. Additionally, the water diversion scheme is likely to be a highly inefficient and wasteful exercise with billions of

cubic metres of water being lost to evaporation, leakage, percolation, etc... through the 800 kms-long canals and aqueducts.

If the project comes to fruition, Tibet and the world would have lost this virgin region and its canyon, a great treasure heritage. But, when the stakes are so high and the ego of the emperors so big, one can have no doubt that the scheme will be implemented. The potential use of nuclear devices to create tunnels for the project raises further serious concerns about the environmental impacts of such a project for the region and those living downstream. There will also be a great danger of sending contaminated waters to northwestern China. This is perhaps one of the most important side-effects, not yet addressed by the Chinese scientists.

For South Asia. India and Bangladesh would be at the mercy of China for adequate release of water during the dry season, and for protection from floods during the rainy season. India knows from its own internal problems how difficult it is to solve a water dispute. When it comes to a transboundary question (when the boundary is not even agreed upon), it seems practically impossible to find a workable understanding. Precipitation in North India (particularly Assam) and Bangladesh is very high (80 per cent) during the four monsoon months (between June to September), and low (20 per cent) during the remaining eight months. China, seeing her own interests, could withhold water for power generation and irrigation during the dry season and release water during the flood season with the catastrophic consequences for eastern South Asia. It has to be noted that if the Tsangpo project is implemented, large parts of the scheme of linking the Indian rivers would become redundant. Last and perhaps most serious: the Great Bend is located in a highly seismic prone area. A huge reservoir and a few Peaceful Nuclear Explosions (PNE's) could provoke disastrous consequences by upsetting the geological balance. Will men be wise enough to learn from the past and study nature's limits and reactions before wanting to alter her?

Liquid Bombs

An event which occurred in June 2000 could be an illustration at a very reduced scale of what could happen if the Tsangpo project is one day completed. At that time, the breach of a natural dam in Tibet led to severe floods and left over a hundred people dead or missing in Arunachal Pradesh. It is not difficult to understand that areas downstream in Arunachal or Assam are extremely vulnerable to what takes place upstream in Tibet. A few weeks later, a similar mishap took place on the other end of the Himalaya. The Tribune in Chandigarh reported this strange event "Even three days after the disaster, the mystery of the flash floods in the Sutlej, which wrecked havoc along its 200-km length in the state, remains unresolved. Experts are at a loss to understand where the huge mass of water came from."

Imagine a 50-ft high wall of water descending into the gorges of Kinnaur in Himachal Pradesh! In a few hours, more than 100 persons died, 120 kms of a strategic highway (Chini sector) was washed away and 98 bridges destroyed. The details of this incident were similar to the Arunachal Pradesh's one. A detailed study carried out a few months later by ISRO scientists confirmed that the release of excess water accumulated in the Sutlej and the Siang river [the Tsangpo] basins in Tibet had led to the flooding. Nearly a year later, the weekly India Today commented "While the satellite images remain classified, officials of the Ministry of Water Resources indicate that these pictures show the presence of huge water bodies or lakes upstream in Sutlej and Siang river basins before the flash floods took place. However, these lakes disappeared soon after the disaster struck Indian territory. This probably means that the Chinese had breached these water bodies as a result of which lakhs of cusecs of water were released into the Sutlej and Siang river basins."

Conclusion

Nobody can deny that China has a very serious problem with food and water. Even the rivers are drying up. An unexpectedly abrupt decline in the supply of water for China's farmers poses a rising threat to world food security. China depends on irrigated land to produce 70 percent of the grain for its huge population of 1.2 billion people, but it is drawing more and more of that water to supply the needs of its fast-growing cities and industries.

The problem is now so clearly linked to global security that the US National Intelligence Council (NIC), the umbrella over all US intelligence agencies, has begun to monitor the situation with the kind of attention it once focussed on Soviet military manoeuvres. Indeed, it is clear today that these questions do not pertain to environment only, but also to international security. If Beijing was to go ahead with the Tsangpo project, it would practically mean a declaration of war against South Asia.

The only solution seems to lie in bringing the matter to the negotiating table. If a river-water treaty could be signed between India and Pakistan in the early sixties, why cannot a similar agreement be made between China, India and Bangladesh, in order to assure a decent life for all in the region?

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Bridging Rhetoric and Reality: Harnessing Space Capabilities for India's Defence

Wing Commander KK Nair*

Introduction

Military space affairs are the flavour of the season. A veritable cottage industry grows around it, not only in India, but all across the globe. In case of India, the surfeit of visions and doctrines put forth far surpass the actual satellites launched. Nonetheless, a vast gap exists between consummation of this deluge of visions and doctrines and obtainment of actual space capabilities. Rhetoric is yet to be matched with reality in any credible manner. It is generally well-known and accepted that space has emerged as an essential component in furthering a nation's comprehensive national power. Every body is in common agreement that space capabilities have become absolutely essential for national development, economic well-being, commerce, and everyday life, besides becoming a crucial component of successful military operations. Yet, no common agreement exists on the need for the military to get involved in space and hence it would be essential to first explore the rationale for the military to be involved in space before going headlong into aspects related to harnessing space for national defence.

The Rationale for Military Involvement in Space

India has a robust civil space programme which is essentially geared towards scientific and development goals. As we move towards greater development, utilisation of space for economic and developmental purposes is likely to increase, and as dependence on space assets and systems increases, the concurrent vulnerability of our country to hostile action seeking to destroy, degrade or deny our space capabilities so painstakingly built over the decades would increase. India's dependence on space for vital economic purposes has been growing rapidly and hence any serious damage or degradation would have a major negative impact on our nation's well-being.

The lessons of history, on the other hand, are clear that wherever serious threats to national economic interests arise, military force would be necessary to protect them in the best manner possible. Military organisations have evolved as instruments of national power to protect national interests and investments. This generates the rationale for military involvement in space; apart from the fact that space enabled capabilities are the core of Revolution in Military Affairs (RMA) aimed at enhancing terrestrial military capabilities and national defence. The kind of modern precision warfare witnessed during the Gulf-War is largely a by-product of this RMA which is aimed at combining the cumulative potential of air and space forces in terms of Intelligence Surveillance Reconnaissance (ISR), communications, navigation etc for providing information dominance vital to nuanced application of force which in-turn enables decisive war-winning effects.

The Utility of Space for the Military

In order to harness space for national defence, it would be essential to briefly acquaint oneself with the basic utilities of space in a military context. The military uses of space expand with every passing conflict as emerging technologies afford greater exploitability of the environment for pursuance of military activities. Until the last conflict, however, the uses were largely of a pacifist military though "non-weapon" nature. Space based assets were mainly aimed at 'Force-Enhancement' missions like observation, communications, navigation, meteorology etc which allowed terrestrial military forces to conduct military affairs more efficiently. Thus most military space missions were auxiliary to other more direct military activities. In fact, the capacity to deliberately cause damage to another party is not the main criterion for attributing a military character to satellites. Most present day satellites affording military capabilities or performing military functions are incapable of directly destroying or damaging another country's property. Apart from 'Early-Warning' satellites which have a clear-cut military role, most of the other military activities can also be performed by civilian satellites and vice-versa. For example, civilian 'Earth-Observation' satellites are used for military remote sensing, civilian (even commercial) communication satellites have been known to carry military transponders and military navigation satellites have overwhelming civilian users etc.

However, as military and commercial reliance on satellites grows, so too has the awareness that space based assets are centres of gravity which are likely to be targeted in war. This in turn has fuelled the quest for development of techniques for protecting one's assets in space as well as denying an adversary the use of space. Thus, while up to the last conflict involving space, space systems were mainly focussed on force-enhancement missions the present focus has shifted to controlling the realm of space for one's own benefit while denying it to the adversary1. The accent on military utilisation of space is gradually shifting beyond enhancement of military force capabilities to control of the environment and actual application of military force "in, from and through space"2. The above trend is evidenced in the quest of space-superpowers like the US embarking on programmes aimed at space control and space force projection.3 Some of these include programmes like the Experimental Satellite Series (XSS) which seeks to use small satellites to manoeuvre around other satellites in order to inspect, service or attack. They also include Kinetic Energy Anti-Satellite (KEASAT) systems, Directed Energy programmes as well as 'Counter-Space' initiatives like the Counter Communications System (CCS) aimed at disrupting satellite based communication used by an enemy for military purposes. The first of such CCS systems was delivered to the US's 76th Space Control Squadron in the year 2004.4Apart from the above, a "space based interceptor test-bed" programme is also underway to develop and test space based miniature missile defence interceptors. The Pentagon's Missile Defence Agency has already provisioned budgetary allocations for the same.5 The concept broadly envisages a limited constellation of space-based interceptors of 50 to 100 satellites offering a thin boost/ascent defence against ICBM's and a multishot mid-course defence against medium to intercontinental range missiles. The agency's plans call for the first contract to be let out in 2008, the first intercept tests by 2012 and "a constellation production decision" by 2014.6 From the foregoing it is amply evident that space based systems are presently in the process of transition from an era of militarization to weaponisation.

The Military Utility of Space for Nascent Powers

However, it needs to be borne in mind that the above transition is applicable only to nations like the US. Its next closest rivals, the Russians and the Chinese are yet to embark on any operationally viable weaponisation programmes. The above is mainly on account of the prohibitive costs and technological challenges involved rather than lofty ethical considerations. The Russians inherited the entire range of capabilities for force-enhancement missions from the former Soviet Union (FSU). However, since the 1990's, its capabilities have been severely degraded due to funding problems. As of 2004, Russia maintained military space programmes only in five areas of early warning, optical reconnaissance, communication, navigation, and signal intelligence.7 With regards to ASAT's, the FSU was the only country that developed and operationally deployed an anti-satellites system (ASAT), designed to attack satellites on low-earth orbits. However, the present Russian Federation (RF) is not known to have any operational ASAT systems.8 With regard to the Chinese, though they are the undisputed leaders in Asia, in relative terms vis-à-vis the US, their capabilities are nascent. As for ASAT's, speculation on the subject is rife and China is known to be actively pursuing such capabilities though it has not presently succeeded in its efforts9 to arrive at an operationally viable system. China's ASAT test of 11 January 2007 was at best a forerunner of capabilities which are yet to move beyond 'proof-of-concept' stage. Simulated test are simpler, acquisition of actual operational ASAT capabilities is a much more complicated endeavour. Other countries with known space-based force enhancement assets in operation include France (Helios image intelligence satellite and theTelecomm-2 communications satellite), Italy (Sicral communications satellite), Spain (Hispasat communications satellite), Britain (Skynet-4 communications satellites), Israel (Eros and Ofeq imagery intelligence satellites), India (TES photo-reconnaissance satellite); Japan (commercial Superbird communications satellite system and information gathering satellites); and South Korea (Kompsat-1 remote sensing satellite). Thus apart from the US, most nations are yet to progress beyond rudimentary military space capabilities and force enhancement missions.

Imperatives of our Military Needs

From the foregoing it is apparent that space based systems provide vital capabilities to successfully execute national military strategy and have found common acceptance across the globe. More importantly, most nations recognise that information derived from space platforms would be vital for success in conflicts. Military affairs in our case cannot be drastically different. In our case also it would be imperative to attain a certain modicum of 'information-dominance' in order to complement our conventional capabilities. Thus, we need to enhance our conventional military prowess by harnessing available space capabilities and potential so as to comprehensively reciprocate to the spectrum of warfare being directed towards us and also limit (if not deny) our adversaries the opportunity to offset conventional military superiority by resorting to threats of WMD, or other forms of unconventional warfare.

There exists an emergent need for examining the options afforded by space primarily to address the following aspects :-

(a) Securing of our space and terrestrial assets and thereby ensuring uninterrupted national development.

(b) Coordination of military requirements and development of military space capabilities.

(c) Integration of space and conventional military capabilities.

National Space Options

While the promise of space is enormous, the actual acquisition of capabilities is nascent, at best. The same would continue to be so in the foreseeable future because of the simple fact that unlike most nations ranging from the US, Russia, China etc which evolved space capabilities for military purposes, in our unique case space capabilities evolved and are designed primarily for civilian uses. Hence, our acquisition and development of military space capabilities would be tempered by this reality. The promise of space for the military is fantastic; the reality of acquisition is more prosaic. We need to explore options with the same in mind and the same is undertaken below.

Enhance Conventional Military Force Capabilities. In view of the foregoing our overwhelming emphasis could primarily be towards force-enhancement missions (it may be borne in mind that for well around forty years, the primary US mission was related to force-enhancement) and also towards passive counter-space defence in order to secure our assets in space. The list of technical advances and innovations of our space capabilities is impressive, and there is an equally long list of potential paths and options for exploiting these advances, as the application of technological advances could support very different objectives. Nevertheless, our options could be primarily categorised as under :-

(a) Build the organisational edifice and infrastructure to support space endeavours.

(b) Use available civil capabilities for force-enhancement, i.e. improving current military force and system capability for optimal task and mission fulfilment.

(c) Undertake passive counter-space defence measures like hardening of satellites, nodes and links etc.

Thus while certain dual-use capabilities could be harnessed right-away, other capabilities would demand dedicated efforts. For example, apart from satellites aimed at providing early warning of Ballistic Missile and Ocean Reconnaissance satellites, the other missions of force enhancement like communications, ISR, meteorology, geodesy could be fulfilled by prevailing civilian space capabilities. To a certain extent an extremely limited exploitation is being undertaken, but the efforts are disjointed and uncoordinated leading to sub-optimal utilisation.

Protection of Space Assets. With regard to protection of space based assets, as of now, no known protection measures have been undertaken to secure our assets in space. An ASAT attack by a hostile entity against our space capabilities would cause an insignificant (if at all any) dent in our military capabilities but an enormous dent on our economic capabilities. Apart from

apocryphal scenarios of ASAT warfares, even in case of less debilitating scenarios like in July 2002, wherein the Chinese extremist cult “Falungong” penetrated Chinese communications satellites SINOSAT2A and SINOSAT3A, and began broadcasting Falungong programming,10causing enormous political and administrative difficulties, there is little that could be done to secure our assets considering that no security measures have been initiated.

Developing Passive Rather than Active Military Space Capabilities. In the previous millennium, military analysts had extolled the virtues of developing active military space capabilities, and the launch of GSLV-1 in 2001 was to mark India’s transition to “milspace dual use crossover”11. No such transition apparently took place then or even later with the launch of GSLV-2 in 2003 or thereafter since. Fantastic military space weaponry like Kinetic Attack Loitering Interceptor (KALI), Directionally Unrestricted Ray-Gun Array (DURGA) etc were envisaged with photo laser weapon testing to be completed by 2005.12 No such weaponry appears anywhere on the horizon as 2007 draws to an end. Certain eminent military analysts came up with grand visions of space and space based weapons being utilised to save us from nuclear war.13 Visions of tactics of ground warfare being applied to space warfare were also forwarded.14 However, the fact of the matter is that none of these visions fructified and most apparently turned out to be mirages. The point is not to criticize with the advantage of hindsight, but to accept the limitations imposed by the prevailing legalities, technological and monetary challenges. Building space capabilities for defence would be severely constrained by the above-mentioned factors now and even in the near foreseeable future. The endeavour hence should be to plan for and build capabilities within the existing capabilities and limitations. Our extant strengths would need to be exploited and ways of mitigating the challenges would need to be explored.

Extracting Capabilities from Civil for Military Uses

Civil and military space activities are complementary and no extra-ordinary ‘budget-draining’ effort is presently foreseen for technology transfer from civil to military space endeavours. For example, launchers make no difference between civil and military payloads. Similarly communication, navigation, imagery, meteorology and geodesic satellites have both military and civil applications. It is expected and would need to be accepted, that economic (and perhaps political) considerations may limit some civil to military spin-offs. However, the compulsions of national interests would endorse the approach that capabilities for defence should not be divorced from the economic and commercial uses of space. These need to be regarded as challenges to be overcome jointly in the larger national security interests, rather than permanent obstacles in building up our military space capabilities.

Differences for Modification. In the near term, the main differences perceived for modification of our prevailing space programme to meet security requirements relate to :-

(a Greater robustness and manoeuvrability to secure space assets against degradation, disruption and destruction by enemy counter measures like jamming, ASAT weaponry etc.
(b) Increased resolution capabilities coupled with more frequent revisit capabilities to meet intelligence, targeting and other requirements.

(c) Independent, secure, dedicated and redundant communication and navigation links to ensure uninterrupted access even during times of crisis, wars etc unlike in the case of the prevailing US based NAVSTAR GPS, Russian GLONASS etc whose use may be denied, restricted or even degraded by the service provider itself.
(d) Sharing of technological and related know-how for building up military specific space surveillance capabilities.

Limitations in Using Space

Nevertheless, it also needs to be understood that space is not a substitute for all forms of military capabilities, or equally important, a panacea for all information voids or military inadequacies plaguing our national security concerns. Defence policy on space, hence should be dictated by rational security needs and not the outer limits of what appears to be technically possible as in case of super powers like the US. Thus, keeping in mind the ‘availability and affordability’ criteria, presently available space technologies need to be dovetailed to meet present national security and defence requirements. future requirements should be projected with due attention to costs, legalities and treaties in vogue, technical feasibilities etc. At the same time, moving from crisis to crisis would not always be a good option. similarly waiting for a crisis to trigger off space support would also not be the best manner in which to evolve aerospace capabilities. Such luxuries in the new millennium are no longer affordable and hence the opportunities need to be seized while they present themselves.

Conclusion

The role of space has witnessed an expansion with every passing conflict and would only expand further as technology and doctrine mature and enable acquisition of greater military advantage. Increasing proficiency in cheaper and smaller micro and nano- satellites would enable greater expansion of their role in influencing terrestrial war-fighting in addition to providing an operational responsive space capability in times of wars and crises. As mentioned previously, increasing utility of space in influencing military results has also led to an increasing need for the capability to preserve and protect assets in space. Hence, in order to build up our military capabilities in space, it is imperative that we harness extant resources and act emergently for inclusion of our military requirements in synchronisation with ISRO’s decade plan in 2008.

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In Tribute: Recalling The 'Sundarji Doctrine'

Colonel Ali Ahmed

Given the 'flamboyance' of his personality, any reference to General Sundarji arouses disparate responses. Happily the most widely subscribed to description of the late General is 'cerebral'.1 To him must indeed be credited the yardstick for quality of engagement with doctrinal questions. This is irrefutably true in terms of the mechanisation of the Army and induction of manoeuvre warfare thinking. However, it can retrospectively be said that General Sundarji would have preferred to be known to history, and more than likely would be known to the future, more through his contribution to thinking on the issue of nuclear deterrence.

While mechanization of the Army was an inevitable evolutionary step, only mid wifed by Sundarji, it is his place in the pantheon of early nuclear theorists in India that is a true measure of his contribution to national security. An independent writer on strategy retired Vice Admiral Koithara credits him with the first serious study of a nuclear strategy for India; a view concurred with by Brigadier Gurmeet Kanwal.2 His uniqueness lies in his input being made primarily in an era when political control of the nuclear agenda dictated a distancing of the Services from the nuclear question. However, the General's untimely departure prevented his ideas from impacting the final shape of the nuclear doctrine that India has progressively arrived at. It can be said that his ideas on the nuclear issue were in character - trifle ahead of the times, which, curiously, they still remain as this article goes on to reveal. The article dwells on Sundarji's place in history by dissecting his refreshingly original perspective on nuclear deterrence.

General Sundarji made an early mark in the nuclear field in publishing the proceedings of a seminar at the College of Combat, of which he was then the Commandant.3 This was perhaps the second articulation of a soldier-scholar on nuclear issues, with Major General Som Dutt having the distinction of being the pioneer in the mid-sixties with his Adelphi Paper at the distinguished London think tank, International Institute of Strategic Studies. General Som Dutt, in wake of the Chinese nuclear explosion of 1964, had made a cost estimate of the nuclear route, without ultimately advocating the capability for India. This is representative of the period, in that even Sam Bahadur was not then enamoured with the Bomb. Perhaps the first time the issue was broached officially by the Army was in General Krishna Rao recommending acquisition of nuclear weapons to the Prime Minister, Indira Gandhi. Rao had earlier headed the committee on restructuring the Army formed in 1975, that had Lieutenant General Sundarji as member. It is also surmised that General Sundarji, as Chief in 1986, communicated the Army's position to the government.4

Sundarji was a perspicacious graduate of the DSSC, Wellington and the US Command and General Staff College at Fort Leavenworth. In the US during the heady days of 1967, he was no doubt witness to the introspection within the American Army on its experience in Vietnam.5 This culminated in the formation of its TRADOC (Training and Doctrine Command) which had innovative, and influential, output on Air Land battle concepts under its first two heads, Don Starry and DePuy. However, Sundarji, aware of the differences in the nuclear dimension of the cold war situation from the one in South Asia, prompted the first thinking on war in conditions of nuclear asymmetry. The postal seminar he organised as head of the College of Combat in 1980, referred to earlier, recorded the majority opinion that nuclear asymmetry compelled nuclearisation. Indian impetus to mechanisation under Sundarji can be said to have been influenced by these doctrinal outpourings. There is thus a link between Sundarji's twin initiatives since manoeuvre warfare was the only answer in a situation of nuclear asymmetry.

With the US looking the other way, Pakistan had acquired the nuclear capability. The role of mechanised pincers in conventional war rehearsed in Exercise Brasstacks was mindful of the emerging situation.6 However, the threat of nuclear use posed problems for concentration of conventional forces of the disadvantaged side. This, inter alia, convinced him in favour of the nuclear option.? He recommended nuclearisation as head of a nuclear planning group constituted by Rajiv Gandhi in Nov 1985. In his view, a minimum credible deterrence was not cost-prohibitive, working out to an affordable Rs. 7000 crores over ten years. He went on to outline his perspective on a putative nuclear-doctrine for a Small Nuclear Power in his famous paper for Trishul, Journal of the Defence Services Staff College.8 His motivation was that professionals have an obligation to go ahead in evolving a doctrine of nuclear deterrence, even if the forces were not in the policy loop at the time.

Though kept out of the closed circle, the military position in favour of nuclearisation could be taken for granted. The reason advanced by Perkovich – noted for his magnum opus on the India's nuclear endeavour - for this marginalisation of the military of the period is that the scientist-politician–bureaucrat combine preferred a minimal capability, being more sensitive to the political and psychological dimensions of a nuclear capability.9 They were unwilling to let the Armed Forces in on the decision-making, fearing that their preoccupation with war-fighting would queer the 'minimal' in the 'minimum credible deterrent' being fashioned for India.10

The Army's contention, nevertheless, was that, being the eventual users, it needed to undertake the prior preparation to including doctrinal assimilation. Prominent Indian-origin India observer, Ashley Tellis, informs that the Army's assimilation of the changed conditions was desultory at best.11 In this respect the Air Force has been more proactive, being in prior possession of delivery system in the form of aircraft. By the late-eighties, it had begun perfecting toss-bombing techniques. With the temporary acquisition of the INS Chakra, the Navy was also in the run for the ultimate in deterrence - survivable, submersible, delivery platforms.12 That the forces are now a part of the decision making and implementing process, in the form of a joint Strategic Forces Command, owes to a 'one step at a time' approach of the government that can be best appreciated only in retrospect.

During the period when developments were less visible, Sundarji was understandably a mild critic of the position of nuclear ambiguity adopted by India all through his intellectual engagement with the issue after his retirement.13 Sundarji memorably termed the seemingly oblivious approach of the Government as a 'lotus eating approach',14 though retrospectively it is known that work was ongoing on all facets of the deterrent. The Government was very much in a position to test as early as 1995, when it was dissuaded by the US, but, retrospectively justified, foregrounding of economic reforms in its grand strategic thinking had restrained its hand. Nevertheless, his output of the period was on par, and in sync, with K Subrahmanyam in its direction and influence.15 His affable accessibility and seminal interventions guided the debate through the Nineties - a period in which strategic studies became virtually a cottage industry; with discussions on the Islamic Bomb, India's Option and CTBT driving the debate.

He was mindful of the impact of nuclear weapons as guarantors against coercion in the early post-cold war years of unipolarity. Most importantly, he understood the stalling impact of Pakistani nuclear capability on the method of war-fighting developed by him in the eighties; of the converging of armoured division-based pincers in Pakistani depth.16 In 1993, he wrote the epitaph on the conventional doctrine that was his own creation: “Even if India were foolish enough to create a large conventional edge, it would be unusable for undoing Pakistan, because of the near certainty that Pakistan would then use its nuclear weapons in extremis,”17 Koithara notes that this did not prevent Sundarji from foreclosing the military option in the form of a ‘limited war’;18 presaging the development of today of the Cold Start doctrine.

Tracing the relationship between the growing nuclear capabilities of the two states and the impact on India’s conventional and nuclear doctrine brings us to the Cold Start doctrine. Kanwal does so in his book Nuclear Defence noting that it would be to play into Pakistani hands were Indian conventional superiority to be restricted by the nuclear threat. In his perspective, after a decade of proxy war and provocations by Pakistan, the national mood changed to one in which Indian public opinion would accept nothing short of dismemberment of Pakistan in case of Pakistani nuclear use. This he maintains should be the response even if Pakistan has struck in face of Indian strike corps offensive operations for quick strategic gains-, a hark back to Sundarji’s days. He thinks calling ‘Pakistan’s bluff’ is militarily possible with a declaratory policy favouring a massive counter value and counter force strike even if Indian soldiers deep inside enemy territory invite a Pakistani first use.19 In the event, India’s conventional doctrine through Cold Start has apparently moved away from the Sundarji era and Kanwal’s advocacy of deep penetration towards the logic of ‘limited war’; while the nuclear doctrine, officially declared in Jan 2003, endorses Kanwal’s position in its adoption of ‘massive retaliation’ for ‘deterrence by punishment’. This brief recapitulation of developments is necessary to situate Sundarji’s version of the nuclear doctrine which is at variance with India’s declared nuclear doctrine on a crucial aspect we shall come to subsequently.

But first, a threading together of Sundarji’s thinking on the nuclear question scattered through his various works. The General was cognizant of the Chinese threat but considered it remote believing that counter value targeting was enough to deter it, as against an expansionist megatonnage-based approach. He coined the phrase ‘Nuclear Reaction Threshold’ - the tipping point triggering a nuclear reaction compelled by a conventional push. The NRT is the much debated phantom nuclear ‘redline’. His writings now constitute the baseline for thinking on de-mated and dispersed deployment profile; disfavour of strategic defences; a non-edgy command and control system; and communications backbone. That weapons of the Hiroshima category could be put to either tactical or strategic use, brought about his opinion that against a small nuclear power an arsenal of about 20 weapons was enough; while a bigger power would require about 50 to deter. He saw no necessity for diversifying the arsenal to include tritium or hydrogen bombs. There is much convergence in his views on No First Use and Minimal Nuclear Deterrence with the national nuclear doctrine.

However, according to this writer, the most consequential part of his legacy is his view on the response to nuclear use. Presently the declared nuclear doctrine in retaining the earlier formulation of the Draft Nuclear Doctrine has it that “nuclear retaliation to a first strike will be massive and designed to inflict unacceptable damage”.20 Since any quantum of retaliation would virtually result in unacceptable damage, there is no call to reflexively interpret this formulation as expansive and amounting to ‘massive retaliation’. Nevertheless, it precludes inclusion as one of ‘graduated response’. This has to be read in the context of professed utility India seeks from nuclear weapons. India, seeking political utility solely for deterrence of first use by the adversary, has resorted to punitive retaliation of a higher order than envisaged in other conceptualisations, such as that of Sundarji.

Sundarji had articulated his position in his article for Trishul thus:

“The resulting philosophy may therefore be one of minimum response, even if it stayed below the received level. It could be a quid pro quo response equated to the received strike. It could be a quid pro quo plus response, to incorporate the element of threat…Finally, it could be a spasmic reaction that aims at the drastic reduction in the adversary’s retaliatory capability and will. ... ,,21

His guidelines for operationalising this philosophy in relation to Pakistan as an example is encapsulated below:-22

(a) aim to avoid to the extent possible any action that might lead to hostilities;

(b) permit Pakistan the option of compromising without loss of face;

(c) modulate offensives in scope and depth of ingress to stop before Pakistani resort to nuclear weapons;
(d) avoid political rigidity through a policy of nuclear transparency in respect of keeping citizens informed of choices made and options avoided;
(e) no first use of nuclear weapons be made;

(f) finally, and most importantly, make every effort at war termination short of nuclear weapon use, failing which terminate hostilities at the lowest possible level of (nuclear) use, with honorable concessions offered to end the conflict.

His definition of minimum credible deterrence can be derived from his premise: ‘That there is neither need nor meaning in attempting to match any adversary in the number of weapons; nor of achieving superiority; as long as there is an assured capability of second strike that can inflict unacceptable damage, with unacceptable damage defined sensibly’.23 The contention here is that this phrase, in conjunction with ‘terminate hostilities at the lowest possible level of use’, quoted earlier, is his defining contribution to nuclear thinking. Unfortunately, it has not got the attention it deserves in strategic literature, and consequently its influence on nuclear targeting philosophy in practice can only be feared to be limited.

General Sundarji lived to see fulfillment to his dream of India as a nuclear power. However, his illness in the run up to his death did not permit him to actively engage with the doctrinal effervescence in India in the wake of Pokhran and Kargil.24 Thus his singular contribution, that could have lent a pronounced humane and politically sensitive turn to the doctrine, could not be ventured. However, any doctrine, if it is to stay viable, is a live concept in terms of growing through iterations of learning and revision. Therefore, there is scope yet for making the ‘Sundarji doctrine’ inspiration for an updating of the national nuclear doctrine.

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