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EDITORIAL

Our efforts at nation building over the last five decades or so have met with a reasonable degree of success. Whereas we have made progress in many areas of activity, there are as yet many in which we need to make more serious efforts. The post-Pokhran environment is gradually getting normalised. The nation has taken the economic sanctions imposed by the developed countries in its stride and their adverse effect is clearly on the wane. The question of India's adherence to nuclear arms control measures is under discussion, with a reasonable degree of surety that the country's vital security interests will never be jeopardised and a fair-deal would be attained. The Government of India is focussing on economic reforms and development, and there are signs of the economy looking up. Efforts to improve relations with neighbouring countries appear to be yielding results and our relations with Pakistan and the People's Republic of China are on the mend. As things stand, the country can still emerge as a strong nation in the coming years, if good governance is restored and if the country's leadership can get its act together.

With the setting up of the National Security Council, it is felt that the decision making process will mature, sooner than later, and a national consensus, as to where India's real interests lie, will emerge in the near future. A relook at the higher defence organisation is being taken, and a restructuring of the Ministry of Defence is likely to come about, which is bound to ensure better management.

Our Armed Forces have attained the stature of being truly apolitical stray attempts at politicisation notwithstanding. Of late, the media has been focussing on cases of some officers belonging to the Armed Forces going to judicial courts and seeking justice. This trend does not augur well for the Armed Forces. Increasing intervention of the courts in what should be the internal affairs of the Armed Forces is likely to adversely effect their esprit-de-corps, cohesion and morale, so very essential for success during war. Taking a holistic view of the various episodes; leads to the underlying cause being inadequacy of leadership. The lead article

in this issue titled "A Matter of Honour" by Vice Admiral Arun Prakash, AVSM, VrC, VSM is a perceptive analysis of what leadership in the Armed Forces is all about. The author was till recently the Commandant of the National Defence Academy at Khadakwasla, Pune, a cradle for training cadets drawn from various sections of the society, and converting them into gentlemen and officers of the Armed Forces. A number of very useful suggestions pertaining to strengthening of the core value system, Academy Honour Code, keeping the interest of the Service above self – interest, not taking Service matters to the judicial courts and so on, have been discussed. The author has suggested that senior officers of the Armed Forces ensure that they abide by the following norms :-

- (a) Personnel – related policies should be above-board, fair and consistent, to ensure that no injustice is done to anyone.
- (b) Discourage sycophancy and allow merit alone to count.
- (c) As a matter of honour, forswear the use of courts, press and other external means, to seek redress for grievances, and confine to Service channels only for this purpose.

A Matter of Honour

VICE ADMIRAL ARUN PRAKASH, AVSM, VrC, VSM

The Strange Case of Jeremy Boorda

Many of us have probably never heard of Jeremy Boorda. He was an American; citizen of a nation whose ethics we continuously sneer at, from the high moral pedestal of our ancient civilisation and culture. On 23 May 1996, he drove home from his office, drew a loaded pistol and ended his life by shooting himself in the chest.

Admiral Boorda was the four-star head of the US Navy, known as Chief of Naval Operations (CNO). The 56 year old Flag Officer was the first man in the history of the US Navy to rise from the ranks to the post of CNO. In an hierarchy dominated by US Naval Academy graduates, Boorda's humble origins meant that he had to prove himself at every rung of the ladder in his long climb to the coveted post of CNO. So what made him take his own life when he had reached the pinnacle of professional achievement? Was it cowardice, or was it a sense of honour?

For a number of years, Admiral Boorda had worn a combat insignia (the small metallic letter "V") affixed to two campaign ribbons earned for shipboard service off Vietnam between 1965 and 1973. As per US Navy regulations, this insignia was to be worn only by personnel who were deployed in specified combat zones, and a routine check by the Bureau of Personnel had revealed in 1987 that Boorda was not entitled to wear it. By the time he became CNO, Boorda had stopped wearing the Combat "V", but in April 1996, this issue had been raked up by *Newsweek* magazine, which had sought an interview with him to discuss it. The interview was scheduled the day Boorda shot himself.

Vice Admiral Arun Prakash is the Commandant of the National Defence Academy, Pune.

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Were two tiny pieces of metal stuck on scraps of ribbon, as a result of what Boorda himself termed, "an honest mistake" enough for him to take his life? Opinions will certainly differ, but Boorda had always stressed the long US Navy tradition of leaders accepting responsibility and accountability. He himself wanted to be seen as such a leader, and apparently could not tolerate the ideal that his personal actions might dishonour the service he had joined at the age of 16.

"Death Before Dishonour" has been the creed of warriors for centuries. Roman legionnaires, Rajput princes, Japanese samurais and British officers have lived and died by this credo. Some British regiments invoked it even off the battlefield. An officer considered guilty of a serious misdemeanour by his peers, would one evening enter his quarters to find a loaded revolver in the open drawer of his writing table. The unstated message from his comrades was stark but unmistakable : "Do not sully the name of Regiment by a messy court martial. Take the honourable way out". Very often he did.

To return to Boorda's case, there can be little doubt that with some legal advice and hair splitting, he could have proved that he had done no wrong, and clung to office. It is, however, obvious that he must have agonised hard over this, and come to the conclusion that his Service was more important than him, or his life.

The Academy's Dilemma

In the current Indian environment a credo like "Death Before Dishonour" would appear melodramatic, and perhaps even comic. But, at least for the Armed Forces, there is another credo, more down to earth, and certainly within everyone's reach : "Service Before Self", roughly translated into Sanskrit as "Seva Parmo Dharma". It is the motto of the institution that I have the honour to command, and which has produced a significant proportion of the officers in the Armed Forces today.

An analysis of the backgrounds of the 600 or so teenagers who enter the National Defense Academy annually shows that they come from every walk of life and every social strata imaginable. They are highly motivated young men who cope with the

rigours of training better than we did over three decades ago, considering that the curriculum has become far more demanding and intensive now. This is an excellent portent for the egalitarian and highly professional Armed Forces of our Republic. However, it becomes clear from a scrutiny of the range and scale of misdemeanours which occur in the Academy, that a large proportion of these young men have received no inputs about a value system, nor were they provided a moral foundation at home or in school.

As a direct consequence of this absence of any ethical moorings, many of them, in the high pressure training environment, tend to fall prey to the urgings of their more worldly-wise and less scrupulous seniors. They are told that a "smart" cadet should possess the basic "skills" to prevail, or at least survive in any adverse situation. Some of the measures recommended in this unwritten "survival manual" include lying, cheating, manhandling, stealing (or "management" as it is euphemistically termed), and impersonation. While it may be understandable for a rudderless young cadet to eagerly grasp such concepts, what astonished me was the benign and even approving attitudes of some Divisional Officers and Squadron Commanders towards such grave infractions of what were once sacred traditions of the Academy. A little reflection showed that coming from the same environment, and being products of exactly the same system, these relatively junior officers did not know any better, and hence saw nothing wrong in approving something they had experienced themselves during training.

An indoctrination campaign, and some preventive as well as stringent punitive measures have helped reduce, to a great extent, the incidence of such offences. However, it was felt that the current social environment demanded that the young man in the Academy be provided with a tangible code of conduct which would spell out clearly what he was expected or not expected to do.

The Academy Honour Code

The Honour Code systems followed in military academies abroad were studied and dissected for weaknesses. A thick musty old file containing notes and enclosures spread over a quarter of

a century (which had repeatedly considered and discarded this concept) was examined and discussed. What finally emerged was the NDA Honour Code promulgated in March 1998, (see Appendix) and a system of administering it.

The Academy Honour Code will, in a short while, be one year old. Despite skepticism all round (except surprisingly amongst the Cadets) it shows signs of taking firm root. This code (if it works) will see a cadet through his basic training, and perhaps even later in life. But what is there to guide our officers, especially in the upper reaches of the military hierarchy, when they falter and stumble?

Self Before the Service?

The year 1998 was a trauma-filled one for the Indian Armed Forces as a whole, and the Indian Navy and Indian Air Force in particular. The events of this period will be analysed for a long time to come. But if one goes deep enough, and takes a holistic view of the series of dismal episodes that one witnessed with a sense of surrealism, the underlying cause becomes quite apparent : failure of leadership. Or to be more specific, failure of senior officers to place the larger interests of their Service before personal or parochial interests. Once considered a rare and unusual phenomenon and even dishonourable, taking recourse to courts of law in order to obtain redressal for service related grievances has become commonplace today. Only the short-sighted will fail to discern that the increasing intervention of the courts in what should be the internal affairs of the Armed Forces will destroy their spirit, cohesion and morale, in a matter of few years. There are two very good reasons for this conclusion.

Firstly, whenever an officer wants to represent his own case in a convincing manner in a court of law, it is inevitable that he will have to show either the Service, or his brother officer (s), or both, in a poor light. And this amounts to nothing else but washing the family's dirty linen in full public gaze. The officer will also feel the need to enlist the support of bureaucrats, politicians and the press to bolster his case; in the process, demeaning himself and his Service further.

Secondly, the judiciary are a set of hard-headed professionals, whose job is to weigh the evidence presented before them in as dispassionate and impartial a manner as possible. Therefore, they can be expected to disregard any pleas based on abstract notions like customs and traditions of service, command responsibility, *esprit de corps*, or morale of the Armed Forces. Hence, it is quite likely that most judicial decisions given purely on points of law will violate these notions which are an integral component and lifeblood of any fighting force.

A Hard Look at Ourselves

Yet it is the stand of many officers, that they were driven to litigation only as a last resort, in order to obtain redress against "injustice". So if we want our officers to forswear courts of law, it is obvious that we have to aim for two basic objectives. First, every officer must be taught from a very young age (perhaps as a Cadet) to have a clear understanding of what constitutes the interest of his Service, as distinct from what is self interest. He must also be taught to always hold the former well above the latter. This may perhaps modify his perception of "injustice" in later years. Secondly, we must ensure that our personnel management systems are equitable and fair, to ensure that injustice is not actually inflicted on any one.

It would be naive and simplistic to imagine that one can either pinpoint a single fault-line or suggest a specific nostrum to bring about instant peace and harmony in the Services. However, if we can somehow make a few small but significant changes in the way many of us at senior levels do things some of these ills would disappear.

I would like to touch upon a few sensitive issues including some of our common failings in this article. I do so without attempting to strike a sanctimonious note, because some of the follies and shortcomings related here, may be my own !

Overweening Ambition

Ambition is a highly desirable trait in a human being, and especially a fighting man. Without it, there would be no aspiration

for higher things, no quest for perfection, and a person could well become an uninspired cabbage.

Having said that, I must add that everyone, and especially fighting men must guard against "overweening ambition". And ambition becomes "overweening" when you start putting your personal advancement above all other considerations. Nothing remains sacred before such an all consuming passion; friends can be stabbed in the back, the Service can be shown in a poor light, and all the means, including press, politicians and courts enlisted for furthering one's personal agenda.

In order to retain our sense of proportion where ambition is concerned, we have to keep reminding ourselves of just two basic facts. Firstly, that our Service is bigger and more precious than all of us, and must take priority over our personal needs in every instance. Secondly, let none of us delude ourselves that he must embark on a holy crusade because he was "destined" to become a GOC, a Fleet Commander, and AOC-in-C or whatever post he covets. If "A" does not get this post, "B" or "C" will; and whoever gets it, will probably do as good if not a better job than "A" would have.

The Resignation Option

Having tried all means of redressal within the Service, if one still feels aggrieved, is there any alternative to litigation and the ignominy that it brings to all parties ?

Yes indeed there is. In fact, in the good old days, when going to courts was still considered a sordid thing to do, the honourable option was to "put in your papers" or resign. It is a sign of the times that this option is not considered very "smart" these days. I know of one or two officers who did resign from Service on issues of principle, and they are still remembered with great respect and affection by juniors and contemporaries alike. You cannot say the same about those who take recourse to writ petitions.

Frankly, the pensionary benefits that a senior officer gets today are generous, and the peace of mind as well as the self

respect which come with a graceful retirement are probably a million times more precious than the extra promotion or some years of service one may wrench out of the Service through the law courts.

Creating Coteries

Sycophancy is a two way transaction, and the burden of guilt must be shared as much by the junior who butters up a senior, as by the senior who encourages or even permits such blandishments. Sycophancy possibly comes more easily to Indians because our culture in any case demands respect for age and position, and it is very easy to blur the very fine line dividing the two.

If not ruthlessly crushed by those of us in senior positions, sycophancy inevitably leads to the formation of cliques and coterries. And this is how it all starts : a junior officer will come up to you one day and say (he may perhaps write), "I want to express my gratitude to you Sir, for the promotion/medal/posting/course you have got for me. I know how difficult it must have been and I am really thankful to you".

At this juncture, all you have to do is to shrug your shoulders modestly, and make an innocuous remark like "Oh, its all right. It was no big deal". You may or may not have been responsible for his bonanza, but by accepting the credit, you would have made him your slave for life. This man will for ever sing your praises, and you will now feel obliged to "take care" of him. The "quid pro quo" would have been established.

In such a case, my recommended line of action is to seat the person, and then administer a severe rebuke to this effect : "Old boy, if you need to actually thank someone for your promotion/medal/posting/course, you obviously did not deserve it, and we should have it cancelled. On the other hand, if you have really slogged to earn it, why give away the credit you deserve yourself by giving thanks to someone?"

By this line of action, you may well deprive yourself of a potential admirer and slave, but you would certainly have nipped a sycophant in the bud and hopefully prevented the start of a coterie.

One may well ask, what is so bad about a senior officer having a small coterie of bright young officers who share his views and ideas on most things, and admire him ? The short answer is that coteries create an unending cycle of sycophancy and patronage, which manifests itself as described in the paragraphs that follow.

Show me the Face_ _ _

The cynical young officer in a typical ship's Wardroom (and I presume it is so in regimental messes and squadron crew rooms too) often sums up our personnel policies with the cynical phrase "Show me face, and I will show you the rule".

For a personnel management system to be accused of arbitrariness, "ad hocism", and inconsistency is the severest condemnation that it can be subjected to. While some of these charges may arise from faulty perceptions, a majority of them are founded on fact. Because goal posts are actually often shifted to dispense patronage, and norms changed to include or exclude people, depending on whether they are in this camp or that. The worst sin that can be committed in this domain, is attempting to form a line of succession, and then re-framing the rules to ensure it.

Fairness, transparency and consistency are the best way of inspiring confidence, making coteries redundant, and minimising instances of perceived injustice. Then perhaps, people will not feel the need to go to court.

Listen to Advice

Contrary to the popular notion, neither age nor rank invest a senior officer with any special Solomon-like wisdom. They give him only experience, which helps him to tide over many a crisis that might stump a younger man. In order to ensure that any gaps in his experience are plugged, and the best advice and assistance is always available to a Commander, a complete staff hierarchy is placed at his disposal. However, in order to give himself the maximum benefit of their expertise, the Commander needs to have an open mind, to welcome new ideas, and even to accept occasionally that he may be wrong.

It is the staff which should be receiving the first and hopefully the most authentic inputs. It is their job to know or to find out, what the junior officers think, and what kind of "baat cheet" goes on in langars, mess-decks and airmen's messes. It is then incumbent upon them to brief the boss honestly and accurately - the bad news first and good news later.

The catch here is that many of us keep our minds as well as doors closed, and thereby shut off valuable inputs. We also make it known deliberately or unconsciously that bad news and contrary views are unwelcome. This breeds a set of courtiers who always bring good news and never contradict the boss. A senior officer who surrounds himself with such people isolates himself dangerously and will certainly take wrong decisions which may cause resentment, and harm the Service. Since his "feedback loop" is impaired, he will never come to know what he has done wrong, and may continue to compound his follies till they reach serious proportions.

Even in an un-democratic set up like the Armed Forces, seeking a consensus, and taking people along (in policy making) is not a bad thing. It may prevent the senior officer from making a serious error of judgement, and will ensure that the policy, once promulgated, is sincerely implemented, even by those who succeed him in office.

Conclusion

What do those in the rank and file of the Armed Forces think of what they read and see in the media about the contretemps at the highest levels ? What are they supposed to make of the allegations and counter-allegations being hurled around? And how do they react when our ladies jump into the fray ?

The fact of the matter is that all this is not supposed to happen, and will not happen if the senior officers of the Armed Forces come to a tacit and unanimous understanding on three main issues which could constitute an unwritten and self-imposed code of conduct.

Firstly, that our personnel-related policies will be above-board, fair and consistent, and that we will do our best to ensure that no injustice is done to any one.

Secondly, that we will discourage sycophancy and not collect coteries around us. Nor will we show undue favour or bias towards anyone, and we will allow merit alone to count.

Thirdly, we will, as a matter of honour, forswear the use of courts, press and other external means, to seek redress for grievances, and we will confine ourselves to Service channels only for this purpose.

The time has also come now for the Services to form inhouse tribunals (on the lines of CAT) to examine and take decisions on grievances of Armed Forces personnel.

Finally, the question arises, that if this code or agenda is voluntary or self-imposed (it cannot be otherwise), how do we enforce it? The obvious answer is, by peer pressure or ostracism. In our rural society, fellow feeling is embodied in the act of all families drawing water from a common well, and by the men-folk passing the same hookah from hand to hand when they gather in the evenings. The most serious punishment that can be meted out to a delinquent in the village is exclusion from both these activities, or *Hookah pani band*, as it is called.

How about some *Hookah pani band* in the Armed Forces ?

*Appendix***ACADEMY HONOUR CODE**

Far more than any weapons or technology, it is the great sense of chivalry, honour and integrity consistently displayed by the Indian Armed Forces that our countrymen have always admired and are proud of. Steadfast adherence to these values in war and in peace, at home and abroad by personnel of the Army, Navy and Air Force has marked them as special people in the consciousness of our fellow citizens.

Today, when the virtues of discipline, honesty, loyalty and patriotism are sadly lacking in public life, it is in national interest that the Officer Corps must continue to stand firm as a rock and uphold the traditional values of the Armed Forces, regardless of moral degradation in the outside world.

It is, therefore, vitally important that our military leaders of tomorrow, who are cadets in NDA today, should be motivated by a firm and deep rooted conviction of what is morally the right course of action to take under any set of circumstances. Underpinning this conviction, must be the clear awareness in their minds that an officer can lead his men into battle, and order them to stake their lives, only if he has moral ascendancy over them. Such ascendancy comes naturally to those who have the strength of character to distinguish right from wrong, and the courage, to always choose the harder right over the easier wrong. I have not the slightest doubt that it was this very inner strength and courage which inspired sons of NDA like Khetrapal and Salaria to such immortal heights of heroism in battle.

While the concepts of "IZZAT" and "SHARAFAT" are inherent and deeply embedded in our culture, it is essential for young and impressionable minds to have before them, a tangible guideline which will help them to steer a steady course in their lives. I have, therefore, directed that a formalised Academy Honour Code be instituted and promulgated for compliance by the cadet body in NDA. The text of this code is as follows:-

I believe that a Cadet must be **truthful, trustworthy, honest and forthright** under all circumstances. I will not **lie, cheat or steal**, nor will I **mislead or deceive** anyone. I undertake to faithfully live up to this code and to continuously encourage my comrades to do so.

The implementation and maintenance of the Honour Code concept will be the responsibility of the whole Academy; the training staff, faculty members, the cadet appointments and the cadet body, on a sustained and continuous basis without any let up. We must strive to imbue a cadet with the spirit of the Honour Code from the day he joins the Academy, and create an environment in which, with time, this Code becomes second nature to him.

It is my hope and expectation that the Academy Honour Code will remain with an NDA cadet as his creed and guiding light, throughout his service career and perhaps even for the rest of his life. It is also my hope, that originating from the "Cradle of Leadership", this Code will proliferate throughout the Armed Forces, and bind our Officer Corps together in a brotherhood of chivalry and honour.

MEMORIAL GATES ON CONSTITUTION HILL

India's contribution to the Second World War effort was roughly equal to that of the whole of overseas British Empire and the Commonwealth put together - a force of about two and a half million men Indian soldiers fought in Malaya, East Africa, North Africa, Tunisia, the Middle East, Sicily, Italy and in smaller numbers in Greece and Indo-China. Of the 27 VCs awarded in Burma, no fewer than 20 Indians were recipients. India lost 1,80,000 of her men in the War. As a debt owed to these fine and loyal soldiers from India, Pakistan, Bangladesh and Sri Lanka for their sacrifices, an initiative has been launched by Baroness Shreela Flather for a suitable memorial in the form of Gates across Constitution Hill at Hyde Park Corner in London. The estimated cost of the Memorial is £ 1.8 million and the hope is that it would be inaugurated by the Queen of England in early 2000.

Security Concerns in Europe in the Early Twenty First Century

H E APOSTOLOS ATHANASIOS TSOHATZOPoulos

The people of European countries, standing on the eve of the 21st Century, live through a period of re-examination of the European security architecture, during the post-Cold War era.

The international system is rapidly changing. The old political, military and economic blocks are transformed to new international institutions and relationships. Nations are re-positioning themselves within the framework of the enlarged groups and blocks, in order to be able to effectively meet the new challenges emerging as a result of the new world economic competition. Today there is a sense of uncertainty concerning the shape and the structure of the evolving international system. The collapse of the Soviet Union has resulted in the creation of "power vacuums" and the search for new regional balances, alliances and security systems. In fact, our era is characterised by the re-ordering of the international geopolitical and economic corelations after the collapse of the bipolar system and the rapid developments in technology.

Issues, such as nationalism and religious fundamentalism, the proliferation of weapons of mass destruction, the violation of human rights, environmental problems, and others constitute factors of instability and pose a serious threat to Europe's security. Nowadays, within a fluid and unstable environment, we are trying to create a new security architecture. In fact, almost all the security institutions being formed and tested during the Cold War period are in the process of transformation in order to successfully meet the new threats and challenges that have emerged after the Cold War.

Excerpted from the talk delivered at the USI on 7th December 1998, by H E Apostolos Athanasios Tsohatzopoulos, the Minister of National Defence of Greece.

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So the prerequisites of a new security architecture have already been set out in three levels of development.

The first level is defined by the evolution of NATO as an organisation of security with Euro-Atlantic dimensions, modulating the prerequisites for an open and "equal" dialogue between USA and Europe. We have to realise that NATO is transforming itself nowadays. Today we have no need to defend the security of NATO member states from an external enemy. We have to create an institution of collective security for the whole of Europe, which will simultaneously give a substantive answer to the question of "how a stable collective security architecture from Atlantic to the Urals will be structured?"

Within the frame of a Pan-European Security, the need for the participation of all European countries and especially of the so-called "Strategic Partners" such as Russia and Ukraine, is imperative. These countries have to share the responsibility for European security and stability.

The institutional framework of NATO-Russia relationship is enhanced by the establishment of the Permanent Joint Council. Additionally, by the establishment of the Euro-Atlantic Partnership Council, as well as the Enhanced Partnership for Peace (PfP), NATO will strengthen the Euro-Atlantic links and will promote stability in the European continent. At the same time the members of NATO must face three challenges – (1) the formulation of a strategic concept, (2) the need for enhanced technology capability, (3) the need for adequate resources.

The second level, on which a new security architecture is constructed, covers the WEU development on double tracks. The one leads to NATO and the European pillar, while the other is developing within the European Union, establishing the defence branch of the Union. Its position, between the EU and NATO creates the new principles of WEU development. That is, the principle of transparency and that of complementarity.

But what about those countries that have not been included

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in the first phase of NATO enlargement? The response to this question leads us to the third level of the new security architecture, configured by the desire of countries such as Baltic and Southeast European ones, for peace and stability during the transition period of their integration to the European Union. During the interim phase, these countries have to be covered by regional security institutions, providing them with efficient guarantees of peace and stability.

The European Union will promote its enlargement to the East, with the aim of gradual political and economic integration of the whole of Europe. The Atlantic Alliance, the most effective international organisation for collective defence during the Cold War period, will proceed rapidly to its enlargement, by the integration at the first stage of the three countries of Central Europe, Czech Republic, Hungary and Poland.

NATO enlargement to the East takes seriously into account the factor called Russia, and through the Paris Founding Act and the Madrid Partnership Declaration, makes efforts to institutionalise the partnership framework with Russia as well as Ukraine. The institutional framework of the NATO-Russia relationship has been enhanced by the establishment of the Permanent Joint Council.

The WEU will be able to undertake crisis management and peace support operations using the assets of the Atlantic Alliance and the Combined Joint Task Forces (CJTF). Thus, a European security system will be created within the Alliance, while in parallel the continuing implementation of the PfP programme will strengthen the existing links with the countries of Central and Southeastern Europe and to the former Soviet republics as well. Unfortunately, the crisis in Albania and the inability of the WEU to successfully respond to this crisis have shown that this security organisation is still a long way from developing into a true European Security and Defence Identity.

The regions of the Balkans, Middle East and Trans-Caucasus-Central Asia form a triangle of instability and crisis in which my country is included at least geographically.

The fluidity in our region is intensifying as a result of competition for the exploitation of energy resources in the Caucasus and the Caspian Sea. This competition will have impacts on the modulation of the stability prerequisites in the region.

Especially, as far as it concerns the Balkans, the end of the Cold War has led to the creation of a new security environment in which serious problems and instability trends coexist with stability trends and co-operation prospects.

Consequently, in the Balkans, we must address two different problem areas:-

- (a) Overcoming the existing crises (Bosnia, Kosovo, Albania).
- (b) Stabilisation of the rest of the Balkan area, with the prospect of accession to NATO of Rumania and Bulgaria.

At the same time, in the same triangle of instability, the European Union and NATO must provide a positive answer to a series of problems, within the first decades of the 21st Century, if they really want a new system of collective security in Europe to function effectively. More specifically :-

- (a) The destabilising policy of Turkey in the Aegean and in the East Mediterranean must be terminated.
- (b) The Cyprus problem, after 25 years, with the steady course of Cyprus towards the European Union be solved in a just and viable manner.
- (c) Temporary axes in the Middle East do not produce stabilising results at a time when the relations between the Palestinians and Israelis are extremely sensitive.
- (d) The Kurdish issue, with the promotion of a political solution has assumed a new dimension, and will shape a new situation in the area.

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- (e) In the Caucasus, the conflict between Armenia and Azerbaijan has a tremendous cost for the region, involving many powers with negative results.

Despite these developments, however, which are visible sources of instability for the 21st Century, it seems that stabilisation in the area of confrontation in the Cold War has positive prospects:

- (a) The accession of the Central European states to the collective mechanisms of security will shape a new balance in Europe.
- (b) The Balkan countries are shaping new relations with NATO and Russia, and are constantly reinforcing their security.

So far I have referred to a series of present and future problems which derive from the triangle of instability and crises, the Balkans and the East Mediterranean, Trans-Caucasia and Central Asia.

I must, however, point out a series of additional factors which will determine the European architecture of security in the 21st Century.

- (a) The problem of nuclear weapons in Europe, and, as relations develop, three significant factors: NATO, the WEU, Russia.
- (b) The future of the European defence industry is directly linked with the future structure of the Armed Forces of European countries and their mode of intervention in areas of future crises.
- (c) The Common Security and Foreign Policy must be shaped over the next few years. Without this, it is difficult for the European Union to exercise Balkan and Mediterranean policy to stabilise these regions.

- (d) Future developments in Northern Africa cannot be determined and it is possible that they will create a new area of instability in the south of the European Union.
- (e) The problems and relations between the USA, the European Union, Ukraine, and Russia will determine decisively those factors of control in Eurasia. Access to the energy sources will most likely create more crucial problems in the 21st Century and the ultimate petroleum routes will establish new alliances, and new sources of instability.
- (f) In the final analysis, the course of mankind, in whatever form, must take into account both emerging peripheral powers, which will play a role in the stability of Eurasia, and I am here referring to India and China.

Greece comprehends its contribution to the construction of a new European edifice of stability at the following levels:-

- (a) Participation in the collective institutions of security.
- (b) Stabilisation factor in the triangle of instability.
- (c) Conveyer of Balkan and Mediterranean policy in the triangle of instability.
- (d) Further development of its ties with Central and South Asian countries, as well as with North African countries.
- (e) Modernisation and re-enforcement of its Armed Forces.
- (f) Peaceful resolution of problems on the basis of dialogue and international law.

I am certain that through mutual understanding and peaceful resolution of differences, NATO, the West European Union and the CSCE will shape the appropriate framework for a viable European security system for the 21st Century.

An Introduction to the Study of Nuclear War

PART - I

MAJOR GENERAL D K PALIT, VrC (RETD)

A serious lapse in the Indian Army's training policy and doctrinal instruction during the last fifty years has been its omission to impart to its senior officers any semblance of knowledge about the implications of nuclear war. The subject does not, so far as I am aware, receive any but perfunctory attention even at our major training institutions such as the Defence Services Staff College and the National Defence College. There was a brief period in the 'seventies' when the late General Sundarji (then Commandant of the College of Combat Mhow) attempted to promote some discussion on the subject - both at the College and through the pages of its journal, by focusing on the tactical - the actual use of nuclear weapons in war. This was a commendable start on a subject that had been almost ritually set aside for so long. When he left Mhow, the "debate" lapsed into silence.

Now that India has convincingly established its claim to be a nuclear weapon power, all aspects of national security will have to be reconsidered in the light of the nuclear factor. Our Chiefs of Staff - however relegated to the wings they might have been in the past in matters of national security formulations - will now have to be drawn into the deliberations of policy - making bodies in order to make their due contributions to nuclear war planning. It is high time that the subject was included in our military training, so that conventional approaches to the study of war and strategy can expand their horizons and not be confined by strategic concepts of the past, which follow a rigid pattern within a narrow framework of established truths known as the Principles of War (such as Concentration of Force; Offensive Action; Surprise et al.). Attitudes

Condensed from chapters on Nuclear Strategy in the Author's Book *War in the Deterrent Age*
Published in 1966 by Macdonalds of London.

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and approaches to strategy-formulation will have to be radically altered. In some ways old concepts have been turned topsy-turvy.

For example, even the assumption that military strategy flows directly from the political, and that there must therefore be a basic accordance between the two, is no longer entirely valid. Because military strategy is a win-the-war strategy, it must include use of its biggest arsenal - nuclear weapons; whereas political (nuclear) strategy endeavours to deny both—that process and the concept, because it cannot tolerate the wholesale mutual destruction that a nuclear exchange would bring about. It, therefore, prefers that wars should begin and remain at conventional levels of intensity. Political leaders will therefore prefer that nuclear weapons be kept away from the control of military commanders. One of the aims of this study of nuclear matters will be to rationalise this basic cleavage between political and military approaches and, at the same time, adapt existing strategic and tactical doctrines to meet a possible future situation when our political leaders and the Government decide that nuclear weapons may actually have to be used to win a war.

During the past fifty years or more - ever since the Americans first used nuclear weapons to wipe out two Japanese cities and their inhabitants - nuclear strategic thought has developed along lines that became more and more sophisticated as the nuclear armories of the USA and Russia grew to alarming sizes, vast amounts of literature have been produced discussing confrontational possibilities and combinations of circumstances; and *a priori* and *a posteriori* theories became so involved that they resembled more a dialectical philosophy than a strategic science. Finally, when each side had assembled thousands of nuclear warheads, they came to the inevitable conclusion that a nuclear war was unwinnable and must therefore never be fought (Reagan and Gorbachev).

That should have been the end of the story; but it was not. All five of the old nuclear-weapon states continued to maintain and even enhance their nuclear arsenals; and since last summer there are two more states, on this sub-continent, who have joined the nuclear club; and judging from the wild and threatening statements

made by posturing politicians of both our countries, they fully believe that nuclear weapons are meant to be used. Hence sophisticated arguments or no sophisticated arguments, Indian Armed Forces must be prepared for the possibility of their use in a future war.

The aim of this article is to provide the reader with a potted gist of the development of strategic thought during the previous fifty years, and to discuss various factors and possibilities that could arise during the course of a war if our government decides to use nuclear weapons.

The first twenty years in the development of nuclear strategy can conveniently be studied in four phases : the first, from 1945 to 1952, was the phase when the USA adopted a policy of Direct Nuclear Defence – because not only did they hold monopoly (or near-monopoly) of nuclear weapons, they also had the advantage that, their Strategic Air Command (SAC) based in Europe could bomb Russian territory, whereas Russian bombs could not reach mainland USA. US nuclear strategy therefore continued to be focussed on the actual use of nuclear bombs in war as was the case when in Japan nuclear bombs were used as a war-winning weapon. This concept, the actual use of nuclear weapons to win a war, guided American strategic thought throughout the Korean War and into the early years of East-West confrontation in Europe when the American nuclear superiority was to be a counter-balance to the tremendous preponderance of Russia's conventional strength following post-war demobilisation by the Western powers.

During those years, American approaches to the use of nuclear weapons focussed on "preventive" and "pre-emptive" strategy – both of which envisaged premeditated first-strike nuclear attack on Russian targets unprovoked in the first case; and, in the second, provoked by an act of Russian conventional aggression in Western Europe. When the first (preventive war) was no longer feasible (because of Russia's growing nuclear arsenal) the aim of the second, to halt any conventional aggression in Europe by the Russians was restated as : to launch an all-out nuclear attack against Russia in response to any form of attack – a policy that came to be known as the Strategy of Massive Retaliation, overtly declared by

Mr Foster Dulles, US Secretary of State in 1953. The role of NATO's conventional forces deployed in Europe would be to act as a "trip wire" to set off the US nuclear attack. In other words, at the first act of any form of aggression, the US would escalate to all-out nuclear "first strike" against targets of its choice – either counter-force (targets – Russian nuclear bases) or counter-value (targets – Eastern bloc cities or industrial centres).

In 1953, the situation altered when the Russians acquired the "hydrogen" bomb, built-up a long-range nuclear bomber force and, at the same time, started a programme of equipping Russian ground forces in Europe with tactical nuclear warheads. A combination of these factors led the Americans to pull a major part of SAC bases in Europe back to the United States – to reduce their vulnerability to Russian nuclear attack (but left behind a sufficient arsenal of nuclear weapons deployed in Western Europe).

The third phase of East-West confrontation was a further swing to Russia's advantage. This was heralded by the establishment of a quantum leap in Russia's missile superiority, dramatically heralded by the launching of the first "Sputnik". Nuclear forces based in America, till then invulnerable, were then seen as having come under nuclear threat for the first time. Thus, having established the "missile gap", the Russians had acquired a lead in both nuclear and conventional forces – an advantage they fully exploited by adopting aggressive postures not only in Europe (e.g. against Berlin) but also on other international fronts (including the confident and successful sabre-rattling over the Suez venture in 1956, when they forced the Anglo-French forces out of the Suez Canal Zone.)

In the fourth phase the United States (NATO) made a successful all-out bid to stockpile an invulnerable and superior ICBM force ("Minutemen") dug into deep sites under the earth's surface. This helped to restore the balance but began a nuclear stockpiles race that eventually led to a terrifying line-up of thousands of missiles on each side – located in the USA, the USSR and on European soil.

It was at this stage that Mr Kennedy was elected President

of the United States of America. He mobilised a whole coterie of intellectuals from Universities and Think Tanks (such as the RAND Corporation) to introduce into the nuclear debate a new era of sophisticated, intellectual assessments. The first result of the new "dialectics" was that the Strategy of Massive Retaliation was modified to allow for the application of the Strategy of Graduated Deterrence – its military translation being General Maxwell Taylor's theory of the "flexible response" (which modified the previous concept of automatic escalation). At the same time, in order to reduce the risk of accidental nuclear war, Mr Kennedy placed all nuclear weapons – even the one-kiloton tactical warheads – directly under the President's push-button. Quite likely it was from that act that doubts first began to assail military strategists whether a nuclear bomb would in fact ever be used in war.

A number of variations in strategic doctrine were introduced during President Johnson's tenure of office, when Mr McNamara was the Defence Secretary. He advocated the use of small tactical nuclear weapons (such as mines) by the NATO ground forces to halt a large-scale Russian conventional attack; and later, during Mr Nixon's tenure, the "Nixon Doctrine" was introduced which accepted "sufficiency" of nuclear weapons in place of the previous insistence on "superiority". It was from this decision that there arose the desire to negotiate arms limitation talks on the basis of parity - the SALT talks. Also, at this stage France, having acquired her own independent nuclear force, the "Force de Frappe", opted out of NATO.

The next big change in doctrinal approaches came during the Carter administration. Mr Carter came to Washington with a missionary's fixation on moral values such as human rights, disarmament and the spirit of detente – and at one time even declared his support for universal nuclear disarmament. He began his tenure by taking steps to beef up NATO's conventional potential, cancelled production of the B-1 (nuclear bomber) and abandoned production of the neutron bomb – all meant to downgrade the nuclear weapons culture.

But then he made a complete volte face in confrontational

policy. In his last year in office he introduced a new destabilising concept of a "working strategy" that brought the likelihood of nuclear war as close to reality as it had ever been; and it came about as a direct result of the SALT talks.

The SALT negotiation was started during the Nixon years and was strictly confined to the United States and Russia with no part to be played by Western European nations. The object was to establish nuclear parity between the two but the parity was to be confined to "strategic missiles".* At the end of the SALT agreement, it was agreed that the US would be allowed a certain number of strategic missiles, the total warheads of which (single and MIRVed) was about 10,000; and Russia was to have about 6,000 warheads. The figures favoured the US but after taking into account factors such as total throw-weight, survivability factor of the two different types of society and others; it was mutually agreed that these figures achieved equivalence.

At the bottom end of the three categories come the tactical nuclear weapons (battlefield missiles and mines). As these did not come under the purview of the SALT talks, the US retained its advantage of possessing about 7,000 and the Russians only about 3,500. However, where the Russians held a marked advantage was in the middle category, the Theatre Nuclear Weapons – that is, intermediate range missiles (IRBMs) located in the home territories of the two superpowers which could strike at targets in Europe (NATO or Warsaw Pact) but had not the range to reach each other's home territories. The USSR, with their SS-4s, SS-5s, held an overwhelming advantage in these theatre weapons and insisted that these, like the tactical nukes, be kept out of the SALT talks.

The reason why the Russians could get away with this marked superiority in Theatre Missiles is because at the SALT talks they had argued, with some justification, that they suffered from three fundamental disadvantages in the US-USSR strategic stand-off.

* Nuclear weapons were by then grouped into three categories as under.

- (a) Strategic – Inter-continental Ballistic Missiles (ICBMs).
- (b) Theatre – Intermediate Range Ballistic Missiles, (IRBMs).
- (c) Tactical – Battlefield Missiles.

First, the threat against them from NATO was multiform - a conventional attack by land, sea and air; an all-out nuclear attack; and political subversion and infiltration of subversive elements across their borders. The US, on the other hand, faced only a uniform threat – an all-out attack by nuclear forces. Secondly the SALT talks (being confined to the super-powers) had not taken into account the large numbers of French and British ICBMs which could attack Russian territory and therefore constituted "Strategic Missiles" as far as Russia was concerned. Thirdly, and most telling of all, was the Russian disadvantage that whereas they had committed themselves - in the UN, to the international press and other forums including the SALT talks – and renounced first use and averred that they would use nuclear weapons only if NATO used them first (i.e., only as a retaliatory weapon) the US had, from the very beginning of the confrontation in Europe firmly predicated its strategy, whether Massive Retaliation, Graduated Deterrence, "Trip-wire" or whatever, on the first use of nuclear weapons (as, indeed, it does to this day).

When these SALT agreements were announced, European members of NATO raised a big hue and cry because they felt that they had been left under tremendous threat of Soviet SS-4, -5 and -20 missiles targeted on them. To this, late in 1978, President Carter responded by proposing to deploy about seven hundred Theatre and Cruise Missiles in Germany, England, Holland, Belgium and Italy – all of them able to hit Russian territory. Predictably, the Russians strongly argued with some justification that this latest deployment turned the erstwhile Theatre missiles of the USA into Strategic missiles (because they could now target the Russian homeland) and were therefore violative of the SALT agreement.

But President Carter went a step further with the issue of his "Presidential Directive No. 59", which for the first time asserted that nuclear weapons in NATO would be used as weapons of defence (besides as weapons of deterrence). In other words, future NATO doctrine would be that the use of European-based nuclear weapons would hereafter be linked to the conventional defence structure: and that was what became the destabilising element. (During Mr Ford's tenure, he had stoutly resisted Defence Secretary

Schlesinger's efforts to introduce this concept - and had finally sacked him for persisting with it.)

Fortunately, the "destabilized" stage in East-West nuclear confrontation did not last long because after the end of the Carter administration new concepts of strategic thought, based on the increased potential on each side to devastate the other regardless of who launched the nuclear first strike known as "Mutual Assured Destruction" or MAD inevitably led to the concept of "Deterrence"- a concept that brought in an era of strategic stability.

(To be Concluded)

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Building the Bomb: Collaboration for Self-Reliance and the Counter Example of India

PROF MATIN ZUBERI

The first five nuclear weapon powers produced their atomic bombs during a period when countries with aspirations to great power status were expected to have the most destructive weapons in their arsenals. These bombs were viewed as talismans of national sovereignty and symbols of national intent and resolve. Their explosions were 'freedom blasts' and occasions for joy and national pride. The American, British, French, and Soviet bombs had origins going back to the Second World War. While the War completely disrupted the French and Soviet nuclear endeavours, it prompted the initial British decision to produce the bomb; but the course of hostilities, especially German aerial bombing, forced the British to merge their programme in the Manhattan Project. The nuclear beneficiaries from the War, therefore, were the Americans. A nuclear triangle developed linking the United States, Britain and France, with the latter being the weakest partner. China embarked upon a bomb project a decade after the end of the War. It was also the first developing country to do so; this set in motion anxieties about 'proliferation' of nuclear weapons. The United States even proposed to the Soviet Union in August 1963 joint bombing of the Chinese nuclear test site.

India started producing weapons-grade plutonium in 1964 before the Nuclear Non-Proliferation Treaty was drafted. American Atomic Energy Commission Chairman Glenn Seaborg acknowledged during his visit to India in January 1967 that Indian scientists were capable of producing the bomb. Pakistani military nuclear capabilities were covertly developed during a period when the Treaty had closed membership of the nuclear club and a regime of

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inspections, controls, and technology denials had been firmly established. The United States became the conductor of this global non-proliferation orchestra. It was arrogantly assumed that no country could produce the bomb without considerable foreign inputs in terms of scientific collaboration, technological assistance, and transfer of sensitive technologies and equipment from industrially 'advanced' countries, either through normal channels or through espionage. This assumption was based on the specific experience of the first five nuclear weapon powers. But the Indian bomb does not fall into this category because none of these techniques was used to develop it.

The emergence of each new nuclear weapon power has been largely determined by its scientific-technological and industrial competence and the evolving nuclear order impinging on it.

The American Bomb

American Under Secretary of State Dean Acheson said in a statement before the Joint Committee on Atomic Energy on 12 May 1947 that the production of the atomic bomb in 1945 was "to a large degree the product of international co-operation". The United States, because of its geographical isolation from the theatres of the War and material as well as industrial resources, "probably" contributed most to its development. Nevertheless, the American achievement owed a great deal to Britain, Canada and other countries whose scientists contributed substantially to the success of the Manhattan Project. Some other countries contributed "indispensable raw materials" for this enterprise.

The Manhattan Project was indeed an international endeavour of the most unusual kind. It was a project in which eminent scientists from Australia, Austria, Britain, Canada, Denmark, France, Germany, Hungary, Italy, New Zealand and Poland participated. These include Hans Bethe, Felix Bloch, Enrico Fermi, James Franck, Leo Szilard, Edward Teller, Victor Weisskopf and Eugene Wigner who had all recently migrated from Europe. They joined their American colleagues in a frantic effort to produce the bomb.

The top secret Los Alamos laboratory where the bomb was finally fabricated under the leadership of Robert Oppenheimer has been described as a 'concentration camp for Nobel Laureates'. It has also been said that more scientific manpower was accumulated at the laboratory than at any time since Isaac Newton dined alone. These scientists were full of a crusading zeal to produce the most lethal weapon because of their fear that German scientists might succeed before them. "For us", confessed Weisskopf, "it was a heroic period". Mathematical physicist Freeman Dyson adds that they did not just build the bomb. "They enjoyed building it. They had the best time of their lives while building it".

The initial British contribution to the Manhattan Project was in giving impetus to it. The Frisch-Peierls Memorandum of March 1940, consisting of three foolscap typed pages, is one of the major documents of this century. It not only calculated the critical mass of fissile material needed for the bomb but also suggested how uranium 235 could be separated and how the bomb could be detonated. This short memorandum swiftly led the world into the nuclear age. The second major document was a report prepared by British scientists in July 1941. The clarity of its analysis and its affirmative conclusion regarding the feasibility of producing an atomic bomb within two and a-half years, coupled with the prestige of British science, removed remaining American doubts regarding the project and energised the American effort.

After early attempts to build the bomb in Britain, it was finally decided to join the Manhattan Project. A group of British scientists, accompanied by some French refugee colleagues, was sent to Canada where they embarked on research for the development of nuclear reactors. This is how Canada became a junior member of the Manhattan Project. The main British contribution, however, was at the Los Alamos Laboratory. Apart from three consultants -- Nobel Laureates Niels Bohr and James Chadwick, and Sir Geoffrey Taylor -- 19 British scientists worked at Los Alamos. Seven of them were experimental physicists, five theoretical physicists, two electronics experts, and five experts in the properties and effects of explosives. The main job of Niels Bohr, the Danish scientist most respected after Einstein, was fertilisation of ideas and raising

the morale of his colleagues. It was thus quite a team. An interesting feature of the team is that six members including Klaus Fuchs (his role will be discussed in the context of the Soviet bomb) were refugees from Europe.

The calibre of this 'British' group is shown by the fact that six of its members became heads of divisions of scientists at Los Alamos. One of them was appointed deputy to the head of the crucial theoretical physics division. Some of them are mentioned in secret patent applications concerning the technology of implosion. As British scientists had pioneered the gaseous diffusion process for enrichment of uranium, they contributed to this vital technology during their stay in America. William Penney, who later directed the post-war British nuclear weapons programme, calculated the blast and shock waves of explosions. These calculations were vital in determining the height of bomb detonations over Hiroshima and Nagasaki. Penney witnessed the first American nuclear test in July 1945, observed the mushroom cloud over Nagasaki, and measured the damage from the explosion. Eight British scientists including Penney were requested to assist in the first post-war American nuclear tests, code-named 'Operation Crossroads', in 1946. Their participation was kept secret and one British scientist who shouted the countdown leading to the explosion was mentioned by American journalists as the 'Voice of Abraham'! Even the official report on the test did not mention the role of British scientists.

Another major British contribution to the Manhattan Project was in secretly cornering the uranium and thorium resources of the world through the Combined Development Trust. By the end of the War, the Trust controlled 97 per cent of global uranium output and 65 per cent of thorium. This was a sort of early non-proliferation measure on behalf of an Anglo-American nuclear monopoly. President Salazar of Portugal wryly remarked to the British Ambassador at Lisbon after the War that the Anglo-American division of uranium reminded him of Pope Alexander Borgia dividing the New World between Spain and Portugal!

According to nuclear historians, the British contribution has-

tened the production of the bomb by about one year. *The Official History of the Manhattan Project*, however, asserts that British scientists were of "moderate attainments" and that they were sent to collect nuclear information from their American colleagues. British contribution "was in no sense vital and actually not even important". It adds: "To evaluate it quantitatively at one per cent of the total would be to overestimate it. The technical and engineering contribution was practically nil...the date of our final success need not have been delayed by a single day". A prominent American journalist, however, had suggested that because the Manhattan Project was actually an American-British-Canadian venture, its product should be called "ABC" bomb; but the Americans had developed what McGeorge Bundy has described as a "collective swollen head" and viewed the bomb as an exclusive product of American genius.

The British Bomb

Despite Roosevelt's commitment to Churchill that Anglo-American nuclear collaboration would continue after the War, the Atomic Energy Act passed by the US Congress in 1946 abruptly stopped all nuclear contacts. British scientists, excluding those needed for 'Operation Crossroads', were asked to leave the United States. Sir John Cockcroft described American behaviour as one of "down-right mendacity". British sense of betrayal certainly contributed to the decision in 1947 to develop an independent nuclear deterrent.

British scientists had undoubtedly gained considerable nuclear knowledge and experience through their participation in the inner sanctum of Los Alamos. They could not be expected, Chadwick said, "to take amnesia tablets before returning home". On his advice, they took with them all their notebooks and copies of technical reports and memoranda which contained their contributions. Cockcroft admitted that they had acquired "almost complete knowledge" of the bomb technology. It was said in those days that pooling of their knowledge and experience would be sufficient for an encyclopaedia of the bomb. A working manual was actually compiled to enable the British to replicate the American bomb. Even then, according to the official historian of the British

nuclear programme, the production and testing of the first British bomb in October 1952 proved to be "a complex task". British scientists had assumed that their country would naturally be the second nuclear weapon power. The Soviet nuclear explosion of August 1949, therefore, was a terrible moment of truth for them. Anglo-American nuclear co-operation was resumed in the late 1950s.

The French Bomb

Frederic Joliot-Curie and his collaborators were the first group in the world to take nuclear fission seriously. By the summer of 1939 they had even prepared a secret patent on a crude uranium bomb. German invasion and the French collapse in June 1940 ended the concerted French nuclear enterprise. Joliot decided to stay in France to lead the French resistance movement; but he sent his collaborators Hans Halban and Lew Kowarski to Britain. They brought with them the entire world stock of 185.5 kilograms of heavy water. This precious commodity was kept in the Wormwood Scrubbs Prison and then in the custody of the Librarian of Windsor Castle. It was used in the British nuclear reactor programme and later in the Manhattan Project.

Three more French scientists, Pierre Auger, Bertrand Goldschmidt and Jules Gueron also joined the reactor project in Canada. The presence of French scientists complicated Anglo-American nuclear collaboration during the War. The British owed a debt of honour to the French but in their eagerness to cultivate the Americans, they were willing to sacrifice French interests. Stringent security regulations shut the French scientists even from results of their own research. Flouting all security restrictions, two of them visited a Manhattan laboratory and returned with basic constants of the reactor and two tubes, one filled with a portion of fission products and the other with a few drops of solution consisting four micrograms of plutonium. Goldschmidt, who was one of them, later observed "The line had been crossed, my scientific career had led me to commit a political act; already the atomic race had begun -- between allies".

After the liberation of their country, French scientists naturally

wanted to go to Paris and tell Joliot about their involvement in the bomb programme. As Joliot had joined the communist party, the Americans wanted to detain them in order to prevent leakage of nuclear information. They were eventually allowed to leave on the strict understanding that they could not take any document with them. Kowarski asked Cockcroft what exactly was a document: were notes written from memory included in its definition? Thereupon Cockcroft drew out of his side pocket a notebook roughly the size of a paperback containing his notes written in a very small and neat handwriting. That, he said, was not a document. All the five French scientists brought back packets of hand-written notes along with what was stored in their memory. This became the basic text of the physics of nuclear reactors that France had accumulated from the Manhattan Project. Heavy water used in the project was also returned to France.

Joliot went to London to propose Anglo-French nuclear collaboration. This would also help Britain "release herself from the grip of the United States". In case of British rejection, he implied that he might have to seek Soviet assistance. This enraged Winston Churchill who suggested that he "should be forcibly but comfortably detained for several months". Anthony Eden had to remind him that Joliot was the most eminent living French scientist and an old friend of Britain.

During the last stages of the War, an American team reached the proposed French zone of occupation in Germany before the French troops could arrive. Everything related to the German nuclear programme was removed or destroyed; uranium stocks were confiscated at gunpoint and shipped to the United States. This was another manifestation of non-proliferation. Despite French contribution to the Manhattan Project, neither the Americans nor the British were willing to give any assistance to the French nuclear effort after the War. They wanted to prolong the Anglo-American nuclear monopoly. Wounded French pride and irritation with the Anglo-Saxons were important components in the completely autonomous French pursuit of a nuclear deterrent. Forced to depend on indigenous resources, the French project was delayed and the first test was conducted in February 1960.

The Soviet (Russian) Bomb

Many Russian scientists had made important contributions to the Twentieth-Century revolution in physics. Peter Kapitsa spent 14 years working with the legendary Ernest Rutherford at Cambridge. Igor Kurchatov built the first cyclotron in Europe in 1937. Two of his junior colleagues, Konstantin Petrzhak and Georgi Flerov, discovered spontaneous fission of uranium.

Soviet intelligence agents in Britain conveyed first details of the "uranium problem" as early as September 1941. Several thousand pages of scientific and technical information were later collected from sources in Britain, Canada and the United States. Only Stalin, his security chief Beria, and scientific director of the bomb project Kurchatov had access to this material. Even Kurchatov did not have access to it until February 1943. His recently published memoranda on these reports reveal that he was not merely a passive recipient of nuclear information but an active participant suggesting important intelligence probes for Soviet agents abroad. He may have felt justified in doing so because the Anglo-Saxon allies had deliberately excluded his bleeding country from the Manhattan Project.

While some scientists had already confessed that they supplied nuclear information to Soviet agents, the identity of others is yet to be established. But the most important source of information was undoubtedly German physicist Klaus Fuchs who had migrated to Britain before the War and was strategically placed at the most secret point of the Manhattan Project -- Los Alamos Laboratory. He believed in the widest possible dissemination of scientific knowledge. Motivated neither by greed nor ambition, he was driven by a moral passion to do what he thought was right. As the Soviet Union was a gallant ally in the struggle against fascism, he thought it was his duty to keep its scientists informed about the secret project. He later helped the British as well in building their own bomb, a project that was kept secret even from the British public.

Fuchs admitted in his confession that he had supplied Soviet agents documents on implosion technology and on high-explosive

lenses as well as copies of his own scientific reports. By June 1945 he had provided a detailed description of the plutonium device to be tested in July, a list of its components and of the materials from which they were manufactured, dimensions of the device, and a complete sketch of it. He later conveyed information about the bomb core, the neutron initiator, and the test. Yuli Khariton, who led the team that designed the Russian bomb, recently admitted that Fuchs's sketch was detailed enough to enable a competent engineer to prepare a blueprint for the bomb. The consensus among nuclear historians is that intelligence reports from diverse sources accelerated the Russian project by one to two years. Fuchs himself believed that he had speeded up the Russian bomb "by one year at least" and even claimed that he had 'put balance' in the balance of terror!

Soviet scientists were under pressure from Stalin to produce the bomb as soon as possible; they were aware of the prospect of possible retribution in case of failure. Kurchatov and Khariton, therefore, decided that it would be prudent to replicate the proven design of the American plutonium device for the first Soviet test in August 1949. Any other decision, says Khariton, "would have been unacceptable and simply frivolous". Other scientists working on the bomb had no inkling of this secret decision. By the spring of 1948, however, experimental work had already begun on an indigenous design. This second bomb, tested in September 1951, had half the diameter, two-thirds the weight, and twice the yield of the first bomb.

While admitting the contribution of intelligence agents, Khariton and his colleagues maintain that the information given to them did not lessen substantially their theoretical and experimental work. Only scientifically and technically competent people could correctly interpret clues being provided in intelligence reports. Moreover, because of the possibility of a deliberate Western design to disorient the Russian effort, they had to conduct many calculations and experiments to test the authenticity of material collected by agents who were not familiar with the arcane language of nuclear physics. They also had to create an atomic industry and all the essential corresponding technologies with highly qualified people. This was

an enormous undertaking in a country devastated by the War. One-tenth of the country's population had died and millions were injured. A visitor proceeding from Moscow east to Minsk, or south to Poltava, or north to Leningrad, would have found everywhere ruins, ashes and graves. Truman had boasted in 1946 that Russians "could not turn a wheel in the next ten years" without American assistance. Despite their deep involvement in the Manhattan Project, British scientists had produced the bomb in five years. Russian scientists had done it in four years. It was undoubtedly a considerable achievement.

A bitter dispute now centres on the relative contributions of Russian scientists and of intelligence agencies to the building of the bomb. Surviving members of the intelligence apparatus who had remained in the shadows are now boasting about their exploits and even claiming that such respected scientists as Niels Bohr, Enrico Fermi and Robert Oppenheimer were willing accomplices in the clandestine intelligence network. The international scientific community has contemptuously dismissed these wild allegations.

The Chinese Bomb

The Chinese nuclear weapons programme was inaugurated on 15 January 1955. Some of its leaders were scientists who were trained abroad. Qian Sanqiang and his wife He Zehu studied atomic physics at the Curie Institute in Paris for three years when France was under German occupation. Wang Gangchang worked in Berlin with Lise Meitner who was the scientific collaborator of Otto Hahn. After the War, he went to the University of California and returned to China before the end of the civil war. Peng Huanwu went to Edinburgh in 1938 to study under the guidance of Nobel Laureate Max Born. These scientists later directed their junior colleagues to study important Soviet publications on science and technology.

Sino-Russian nuclear co-operation began after the Treaty of Friendship, Alliance and Mutual Assistance was concluded in February 1950. The first Chinese scientific delegation led by Qiang Sanqiang arrived in Moscow in 1953 to negotiate details of future co-operation. By July 1953 about 10,000 tons of Russian nuclear equipment and material had arrived in China. In 1954 a Joint Insti-

tute of Nuclear Research was set up in Dubna near Moscow where about a thousand Chinese scientists received training.

Between 1955 and 1958 several accords were signed to promote China's nuclear science, industry, and weapons programme -- to conduct joint surveys of Chinese uranium resources; to provide assistance for research on nuclear physics, including the supply of a nuclear reactor and cyclotron; and to give aid in building nuclear industries and research facilities. Because of diplomatic isolation and American nuclear threats, the Chinese leadership was eager to obtain massive Russian assistance. A scientific mission led by the president of the Chinese Academy of Sciences concluded a protocol in January 1958 on joint research specifying 122 scientific and technological items.

There were between 11,000 and 50,000 Russian specialists in China at various periods of time to develop its science and technology. Furthermore, about 38,000 Chinese scientists received training in the USSR. China set up 24 defence enterprises with Soviet help, which provided the foundation for the development of corresponding branches of Chinese industry. Another 33 were being built in 1963. Large quantities of technological documentation were transferred enabling China to produce frontline fighter aircraft, missiles, ships and submarines. Soviet ideologue Suslov recalled on 10 July 1963, before a delegation led by Deng Xiaoping, the 198 modern industrial enterprises China built with Soviet technical assistance, the scientific research institutes set up, the technical cadre trained in the Soviet Union and the 21,000 sets of scientific-technical documentation including more than 1,400 plans of whole enterprises.

As China had launched a crash programme to master the entire spectrum of nuclear weapons technology in the shortest possible time, it desperately needed Russian assistance. Russian scientists assisted China in uranium mining, training Chinese scientists, building nuclear installations including a gaseous diffusion plant. This enabled China to develop its nuclear industry and permitted progress far beyond indigenous capabilities.

An extraordinary agreement between the allies was the New Defence Technical Accord of 15 October 1957 which promised

blueprints for, and a working prototype of, an atomic bomb. The Chinese even built a room to display the prototype for instructional purposes. Chinese workers were repeatedly sent to the railway station to pick up the prototype, which never arrived. It was actually packed and was about to be sent to China. This unique transaction of the nuclear age was prevented at the last moment on the initiative of the Soviet minister in charge of nuclear weapons. Because the Soviet refusal to supply the prototype and the technical data was conveyed in a letter dated 20 June 1959, the Chinese dubbed their first nuclear device '596', indicating the year and month in which Moscow conveyed its decision.

Chinese scientists repeatedly asked their Russian colleagues details of the bomb design. The Russians would clear their throats but would not break their silence; this impelled the Chinese to call them "mute monks who would read but not speak". Before their departure for Moscow, however, Russian scientists shredded all sensitive documents. The shrewd Chinese assembled the fragments left behind and succeeded in putting together a vital piece of information -- clues to implosion. The departing Russians thus unwittingly contributed to the Chinese bomb design!

The nuclear relationship passed through three stages determined by the evolving nature of the broader Sino-Russian alliance -- the era of dependency (1955-58), the phase of interdependence (1959-60), and, finally, the period of independence beginning in the summer of 1960 with the departure of Soviet scientists. Anglo-American nuclear collaboration had also gone through the stage of dependency, interdependence and self-sufficiency. Dependency in both cases introduced strains in the relationship. Unlike Anglo-American nuclear co-operation in which the British contributed substantially to the Manhattan Project, however, Chinese scientists could contribute nothing to a country that was already a thermonuclear superpower. All scientific, technological, and industrial assistance was from the Russians to the Chinese. This total dependence did provide some technological shortcuts thereby accelerating the Chinese bomb project, while at the same time reinforcing the determination to achieve self-reliance as soon as possible. Abrupt termination of nuclear relationships by the Americans and

the Russians caused great bitterness among the British and Chinese, respectively. Anglo-Saxon relations, however, remained friendly because the British exercised almost biblical patience in their dealings with their overbearing ally. Sino-Russian alliance, already subjected to strains because of a series of ideological and political disputes, simply ruptured. China became the only nuclear weapon state that turned its thermonuclear apparatus on its former nuclear benefactor.

The Pakistani Bomb

The most remarkable characteristic of Pakistani nuclear weapons programme is the covert techniques to obtain blueprints, nuclear materials and components from different parts of the world. According to Nobel Laureate Abdus Salam, Pakistan had in 1983 just about 13 professors of physics and a total of 42 Ph D physics teachers and researchers in its 19 universities; this out of population of 90 million. Instead of strengthening its weak scientific-technological and industrial base, Pakistan resorted to organising a global network of clandestine purchases through dummy companies. Metallurgist Abdul Qadeer Khan is supposed to have master-minded this covert operation. A declassified US State Department memorandum of 1983 says that gas centrifuge designs were "stolen" from the European consortium Urenco. Khan was accused of having done it from *Ultra-Centrifuge Nederland*, a Dutch partner of Urenco. He was sentenced in absentia to four years in prison but was acquitted by a higher Dutch court on the ground that the prosecutor's office did not deliver its summons to him in a proper manner.

Khan's objective was to develop the enriched uranium route to the bomb. Various components and materials needed for the military project were obtained through the global network. The competitive greed of industrial firms in Britain, Germany, Switzerland, Canada and the United States could be relied upon to circumvent their respective countries' domestic technology controls as well as technology denials mandated by the non-proliferation regime. Some Pakistani nationals were occasionally caught red-handed in secret commercial dealings but the covert operation moved ahead over a period of years.

The Sino-Pakistani nuclear axis, cemented by Zulfiqar Ali Bhutto, is one of the unique features of the nuclear age. Unlike Sino-Russian nuclear collaboration, which lasted only a few years, Chinese assistance to Pakistan's nuclear and missile programmes has been extensive and has continued for decades. No other nuclear weapon state has been so generous in distributing goodies as China has been to Pakistan.

The long list of materials and equipment supplied by China is reported to include highly-enriched uranium, tritium for boosting the yield of nuclear devices, ring magnets for producing weapons-grade uranium, a special furnace to melt plutonium or enriched uranium into the shape of a bomb core, an unsafeguarded reactor to produce weapons-grade plutonium, an unsafeguarded plutonium reprocessing facility, M-11 ballistic missiles, and a factory to produce ballistic missiles. Chinese scientists have visited Pakistani nuclear facilities in order to help their friends acquire the necessary nuclear expertise. China has thus assisted Pakistan in the development of both the enriched uranium and plutonium routes to nuclear weapons and also provided the necessary delivery systems.

The most important component of Chinese assistance was the supply of the complete design of the nuclear warhead carried by a ballistic missile in its fourth nuclear test in 1966. American intelligence sources discovered this piece of information in 1983. Computer modelling by them revealed that it was a workable bomb. Former CIA official Bearden recalls, "we went to them and said, 'here is what your bomb looks like' - even showed a model, I believe". Pakistan, however, had become a frontline state in the American effort to dislodge Soviet forces from Afghanistan. The \$3.2 billion American aid package for this purpose facilitated the Pakistani nuclear enterprise. According to Bearden, "Reagan and Bush said it ain't a bomb until they [the Pakistanis] turn that last screw and painted b- o- m- b on the side".

Qadeer Khan says that Pakistan attained the capability to explode a nuclear device in 1984 and that he told General Zia-ul-Haq that "whenever you order, it will not take more than a week or two to do it". A member of the Pakistani Atomic Energy Com-

mission has recently revealed that work on digging tunnels at the Chagai Hills for testing purposes was actually started as early as 1978 and completed in 1982. A 'cold test' was conducted at the site in 1986. These activities suggest that the Chinese bomb design might have been received much earlier than 1983 when the Americans discovered this transaction. Considering the intimate linkages established way back in the 1950s between the Pakistani military establishment and the Pentagon, it is incredible that all this activity remained hidden from the prying eyes of the American intelligence network. American Presidents continued to certify until 1990 that Pakistan did not possess a nuclear explosive device.

The six nuclear tests in May 1998 were conducted under the leadership of Samar Mubarak Mand. According to Pakistani sources, all of them were boosted fission devices using enriched uranium.

The Indian Bomb

The most distinctive feature of India's nuclear enterprise has been its relative autonomy and quest for self-reliance. Homi Bhabha, eminent physicist, visionary and science administrator who presided over the first International Conference on the Peaceful Uses of Atomic Energy held at Geneva in 1955, launched it with the full support of Jawaharlal Nehru. Like all other countries whose nuclear projects began after the Second World War, India also sought early assistance under the 'Atoms for Peace' programme of the United States. Small quantities of heavy water and other nuclear equipment were imported from the United States and Britain. Indian scientists were also sent for training to Britain, the United States and France. India's first experimental research reactor, Apsara, went critical on 4 August 1956. Built indigenously at a time when even industrialised countries were buying such reactors from the United States and Britain, it was also Asia's first reactor.

Two momentous decisions were taken during the Nehru era. It was decided to build a research reactor with Canadian assistance under a contract signed in 1956. The major technical effort, however, was Indian. As it was the Canadians' first international nuclear transaction, it gave a boost to their infant nuclear industry. They were astonished to find that Indian scientists had succeeded

in producing natural uranium fuel charge for the reactor. Because Canada could not supply heavy water, the United States agreed to sell 21 short tons in March 1956. It was, therefore, called Cirus ("Canadian-Indian reactor, US"). Nuclear commercial transactions had just started and an elaborate system of inspections and controls (safeguards) had yet to be established. All that was then required was pledges that the reactor and the heavy water would be used only for peaceful purposes. Another decision was to build a plutonium reprocessing plant, which started operation in 1964. These decisions were designed to enable Indian scientists to acquire skills in handling plutonium, needed for what was then called the 'plutonium economy' of the future. Apart from the United States, the Soviet Union, Britain and France who could reprocess spent nuclear fuel, the only other reprocessing plant in the world at that time was at Mol (Belgium), owned by a consortium of 13 European countries.

The basic framework of Indian nuclear policy and diplomacy was laid down by Nehru in May 1954 when he declared that India was prepared even to limit "in common with other countries" its independence of action "provided we are assured that it is for the common good of the world and not exercised in a partial way, and not dominated over by certain countries, however good their motives". Indian responses to global nuclear issues like imposition of nuclear safeguards, the NPT, the CTBT and the proposed FMCT have been determined by this criterion. Nuclear safeguards have not been allowed to be imposed on indigenously produced nuclear installations. This insistence on insulation from foreign intrusions provided room for the indigenous development of India's nuclear power stations, research reactors, reprocessing plants, and so on.

The reactor system chosen for India's civilian programme was also influenced by the long-term goal of self-reliance. It is the heavy water-moderated natural uranium reactor system, which is conducive to acquiring nuclear autonomy. Canada developed this reactor system because it has plentiful supplies of uranium. The Indo-Canadian agreement for the supply of the Rajasthan nuclear power station provided for Indian participation in its construction. The import content of the first of the two reactors for the station was 58 per cent; for the second reactor it was further reduced to

40 per cent. The agreement also contained an unusual clause for reciprocal inspections of the station by Canada and by India of the Douglas Point Canadian nuclear power plant. Having established the principle of equality, India voluntarily decided not to inspect the Canadian plant.

The Americans pioneered an enriched uranium reactor system because they had plentiful supplies of enriched uranium; it was expected that this system would dominate the international market. As enrichment technology was then a closely guarded secret, this system established a dependent relationship with the supplier country. Deviating from the policy of promoting nuclear self-reliance, it was considered prudent to gain experience in operating such a reactor as well. The Tarapur nuclear power station was the first American nuclear sale in Asia. It was a turnkey job with an attractive financial package. India accepted safeguards on this station because the United States had guaranteed supply of enriched fuel till the end of its lifecycle.

As early as 1955 Bhabha had spoken about the economic benefits of using plutonium explosives instead of conventional ones for major engineering projects. Ambitious projects for peaceful uses of nuclear explosions were subsequently started by the Americans and the Russians. It was, therefore, decided to master this technology for India's developmental projects. The leader of the scientific team responsible for the peaceful nuclear explosion of May 1974 was Raja Ramanna. P K Iyengar, Rajagopala Chidambaran, and Anil Kakodkar assisted him. The Defence Research and Development Organisation (DRDO) led by B D Nag Chaudhury made a significant contribution in developing lenses and in fabricating high explosives.

Some non-proliferation pundits accused India of using American heavy water in Cirus for the nuclear device. The American Atomic Energy Commission, however, stated that there was "no reason to believe" that any US supplied material had been used. Heavy water generally degrades by about 10 per cent every year. The State Department declared that the American heavy water in Cirus must have been completely replaced by heavy water India had been producing since 1962. As for the fissile material pro-

duced in Cirus, India maintained that there had been no violation of the peaceful uses pledge. Mitchell Sharp, the then Canadian Secretary of State for External Affairs, admitted at a press conference on 22 May 1974 that "the Indian government has not broken any agreements that it [had] entered into".

The non-proliferation pundits who arrogantly assume that without Western assistance no developing country can make substantial progress in the nuclear arena ignore these official denials. The latest misrepresentation appears in the August 1998 issue of the prestigious *Scientific American*. It is claimed that the United States provided critical blueprints, know-how and components for India's plutonium reprocessing plant based on the Purex process. Such a claim was not made even in the aftermath of the peaceful nuclear explosion. It was admitted in the September 1965 issue of the American journal *Nucleonics* that the reprocessing plant was "designed and built entirely by Indian engineers with most of the equipment fabricated domestically". In a technological comparison of the Indian and Japanese nuclear programmes published in the July 1967 issue of *Asian Survey*, two American scholars observed that the most remarkable feature of the Indian enterprises was its self-reliance and that the reprocessing plant was "designed, built and put into operation by Indian scientists and engineers." Moreover, as the reprocessing technology including the Purex process was declassified by the United States, this technology was in the public domain, and there was no need for India to borrow it from the United States.

The 1974 explosion was viewed by the Americans as a challenge to the established nuclear order and they reshaped the non-proliferation regime by tightening technology controls. Using pending applications for the shipment of enriched uranium fuel for the Tarapur station, they tried to discipline India. This threatened the operation of the station located in an industrially important region of the country. India, however, refused to accept 'fullscope safeguards' demanded by the United States for the resumption of fuel supplies. Successive governments in New Delhi showed their determination not to compromise on nuclear autonomy essential for keeping the weapons option open. Despite its commitment in an international agreement to supply enriched fuel till 1993, the United States

maintained that its domestic legislation did not permit it to do so. A compromise was eventually arrived at whereby France and later China agreed to supply fuel for Tarapur Station.

India endured almost a quarter century of technology embargoes and efforts to isolate its nuclear scientific establishment from any kind of foreign collaboration. These attempts at throttling civilian nuclear technology have certainly slowed down the nuclear power programme. The Canadians walked out of a partially built reactor in 1974 and stopped nuclear collaboration. The Americans refused to allow reprocessing of nuclear waste from the Tarapur station. Faced with these adverse circumstances, Indian scientists had to do considerable innovative work to keep the two stations in operation. A large research reactor called Dhruva, "the only one of its kind in the world" according to Raja Ramanna, went critical in 1983. It is capable of producing weapons-grade plutonium in large quantities.

Nuclear autonomy facilitated the development of the weapons option. Except for the Rajasthan and Tarapur stations now under pre-NPT safeguards, the entire nuclear fuel cycle is indigenous and autonomous. The unique feature of the weapons option, therefore, is that it has emerged from the expansion of India's civilian nuclear enterprise. In contrast, the first five nuclear weapon powers as well as Pakistan produced fissile material from nuclear installations dedicated to military pursuits.

The five tests of May 1998 were conducted under the overall leadership of APJ Abdul Kalam. Rajagopala Chidambaram and Anil Kakodkar led the nuclear team. DRDO again played an important role in the test. Indian scientists have established a record of sorts. India was the only country whose first explosion in 1974 was conducted underground and not in the atmosphere. Secondly, a boosted fission trigger ignited its first thermonuclear device. Thirdly, this thermonuclear device was simultaneously tested along with a prototype fission warhead and a sub-kiloton device. No other country is reported to have simultaneously tested such a diverse configuration of weapon designs. All these achievements have been possible because of nuclear autonomy and inspite of

attempts to isolate Indian nuclear scientists from contacts with their counterparts abroad.

There has been some Western scepticism about the low yield (45 kilotons) of the thermonuclear device on the assumption that hydrogen bombs have generally been in the megaton range. Rajagopala Chidambaran has explained that the yield was deliberately kept low in order to avoid damage to the people and structures of the neighbouring villages. Satinder Kumar Sikka, head of the team credited with the physics design of the nuclear devices, has pointed out that the yield of thermonuclear explosives can vary from 1 kiloton to over 60 megatons. He has now revealed that the Indian thermonuclear device was triggered by a boosted fission primary that uses a more advanced technology than a fission bomb. BARC Director Anil Kakodkar says that Indian scientists will soon prove "scientifically and through peer review" that thermonuclear fusion did take place; they will publish data collected from the tests to substantiate their claims. That the Indian claims are scientifically credible is indirectly acknowledged by the leading American nuclear weapons designer Theodore B. Taylor. According to him, Indian scientists might have opted for a low yield partly because "it would be a more severe test. It's harder to be accurate in predicting the behaviour of a smaller weapon". He has also pointed out that the United States has produced tactical thermonuclear weapons in the past.

Detection of nuclear tests and estimating their yields was a difficult enterprise in the early years of the nuclear age. During test ban negotiations in the 1950s, there was a great deal of controversy regarding capabilities to detect nuclear tests and differentiate them from earthquakes; this shaped the science of seismology, transforming it into a major academic-industrial-military endeavour. The first nuclear weapon powers could maintain secrecy or make tall claims regarding their tests. An episode from British nuclear history is of interest in this context. The hazards of radioactive fallout from American and Soviet thermonuclear tests prompted negotiations about the technical feasibility of a test ban. This threatened to prevent a demonstration of Britain's thermonuclear prowess. In its hurry to join the thermonuclear club, Britain

carried out a classic bluff through clever manipulation of newspaper reports regarding the four tests conducted in 1957. It was claimed that one of these was a hydrogen bomb "in the megaton range". In fact, none of the tests was a thermonuclear explosion and even today the British government is reluctant to release official figures about the yields of these tests. This bluff paid rich dividends in the form of the resumption of Anglo-American nuclear relationship. A meeting between American and British scientists was arranged at which the British were instructed to discuss their designs; an American military officer was present to ensure that no American scientist spoke out of turn. British scientists revealed a design of an *untested* two-stage radiation implosion weapon. This suitably impressed the American scientists. The American Atomic Energy Act was consequently amended and Britain was recognised as a country that had "achieved an advanced state of weapons research and development in both the fission and thermonuclear field". The Americans then transferred to the British detailed design drawings and material specifications of many of their most modern thermonuclear weapons. It was only on 28 April 1958 that Britain *first tested* an H-bomb. Such deception is no longer possible when a global network of seismic stations can instantly record tremors in the earth's crust and easily differentiate nuclear tests from natural phenomena.

Indian and Pakistani nuclear tests have posed a formidable challenge to the global nuclear order which recognises only five nuclear weapon powers. India, Israel and Pakistan have so far been recognised as 'threshold' countries. All other states party to the NPT have already renounced the right to produce nuclear weapons. Neither India nor Pakistan is a 'threshold' country any longer. And Israel is generally credited to have a sophisticated arsenal of 100-200 nuclear weapons. How long can the international community maintain the fiction of 'threshold' countries? As Edward Teller said immediately after the Indian tests, "the governments that are responsible for roughly half the population of the world already have nuclear explosives... We should start thinking not in terms of what we wish, but in terms of what is reality."

Dealing With China in the Twenty First Century

PART I

MAJOR GENERAL VINOD SAIGHAL, VSM (RETD)

It is in India's interest to see China strong enough to provide 'credible' bi-polarity in the interregnum during which the world moves towards the establishment of a globally respected United Nations system; one which would be capable of enforcing its mandate 'equitably' in all parts of the world without let or hindrance. At the same time it is 'vital' to India's interest to never underestimate China's threat *potential*.

Both countries represent two of the earliest civilisations that have been able to continuously hold on to their older traditions since the dawn of history. Historically, China has had a tradition of world dominance through power projection (i.e., the Middle Kingdom ideation). India, on the other hand, has never aspired to military or economic dominance. In ancient times when India was a powerful country the only influence it sought to project was one of peace and harmony. Today, at the close of the second millennium after Christ - and the fifth or sixth millennium dating from the ancient civilisations that flourished along the banks of the Indus, the Nile, the Euphrates and the Yangste - both countries have only recently emerged from the long night of foreign domination.

China fought its way to freedom. India, having taken recourse to Gandhian pacifism, had freedom delivered to it in a relatively peaceful manner. There was, however, an enormous price tag attached to the pacifist route to freedom - the violent partition of the country. After the establishment of unity through the bloody route, Chinese leaders understood, more comprehensively than anyone else, that power, in the ultimate analysis, *did* flow from the barrel

Maj Gen Vinod Saighal retired from the Directorate General of Military Training, Army Headquarters.

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of a gun. They never had illusions on this score. Having understood the currency of power, they went on to occupy Tibet before India was able to consolidate itself after the trauma of partition.

Indian leaders, on the other hand, were not able to grasp the global reality of that period. They tried to re-build India on the platform of idealism; more relevant to the days of Emperor Ashoka and possibly the coming millennium rather than to Twentieth Century reality. They made way for the Chinese in Tibet. India paid a price for its lack of realism.

With this resume, it is time to leave the Twentieth Century behind and look forward to the Twenty-First; not forgetting, however, that India moves into the next century with the same mindset that dominated the thinking of its leaders in the past. It is worth pausing a while, to move away from the region, and look at the two countries, China and India, from the other capitals of the world. How do they perceive these countries developing in the next century, say in the years 2010, 2025 and 2050.

Year	India*	China
2010	Nowhere	Well on the way to becoming the second super power of the world.
2025	Possibly a middle ranking power.	Definitely the second super power.
2050	Dominant power within South Asia. And?	Able to exercise global influence at par with the USA and an independently assertive European Union.

Models of China's Pursuit for Power

For the purposes of discussion, three models have been taken

*The projections relating to India could dramatically change in the positive direction from about the second decade of the century should it be able to stabilise its population and if professionalism in governance were to become the order of the day.

to examine China's probable development in the next century. They are – Steady Expansion Model; Dynamic Expansion Model; and Implosion Model. Diagrammatically these are represented in the following manner:

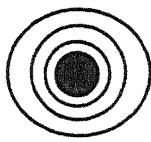


Fig. 1

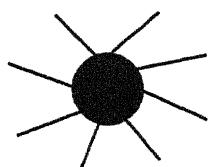


Fig. 2

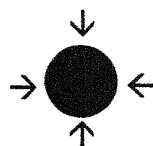


Fig. 3

Steady State Expansion Model (Figure 1)

According to this model - denoted by concentric circles - China expands its influence in the next century in ever expanding circles. Going outwards from the core, the first circle denotes the spread of Chinese influence to regions contiguous to China, i.e., the Asia-Pacific region, North and South Korea, Taiwan, Japan, the islands under dispute in the South China Sea (notably Spratly Islands), Mongolia, Russia, South East Asia, South Asia and West Asia. The second circle denotes the spread of China's geo-political power to the whole of Asia and Australia. The outer and last circle represents the spread of Chinese geo-political influence to include the whole world minus North and South America.

The difference between the words, influence and power, needs to be understood in the context in which they are used here. Influence means that China's sensibilities would weigh heavily in any major foreign policy decision taken by its neighbours in Asia; whereas power implies that China would have developed the military capability to project that power in the region regardless of any intimidation on that score by the USA. Russia would, in all probability, remain outside the ambit of such projections because of its retaliatory nuclear might.

India may not be able to challenge China, even in South Asia, if India's military disparity with its bigger neighbour in the conventional as well as the nuclear field remains vastly inferior, as

at present. The tragic part, however, is that military disparity, if not checked, will continue to grow to a level where India becomes marginalised in its own region as well. In the years ahead China's military might would be in a position to challenge that of the USA while Indian defence planners will continue to defend their inadequacy by maintaining - as they have been doing religiously since the 1970s - that China remains ten years away from becoming a real military threat to this country.

Dynamic Expansion Model (Figure 2)

This model depicts uncontrolled or runaway growth as distinct from the steady state expansion depicted in the previous model. It could in some ways be compared to what happened in Indonesia. The point at which the country explodes, in the Indonesian fashion, would be difficult to determine. It could happen in twenty years or after fifty years. There are several factors, which could propel the country in this direction. Some of the factors are:

- (a) The extent of consolidation of power by Jiang Zemin; and his longevity.
- (b) Flowing from the first point, the smoothness, or otherwise, of the succession to President Jiang Zemin when he leaves the world stage. It would be worth recalling here that had Deng Xiaoping not gained ascendancy in the post-Mao struggle, the history of China would have been different. It would also not be out of place to recall here the manner of fall of Mikhail Gorbachev and the breakup of the USSR.
- (c) American attempts to force the pace of change of modernisation and democratisation in China; a pace that prevents the Chinese leaders from being able to control the fallout from such rapid change. It would arguably be the quest of American geo-political strategy to engineer the breakup of China (and India as well) so that no credible challenge would remain to American dominance of the globe in the Twenty First Century, and beyond. And should America succeed in its endeavour, the turn of the European Union would assuredly come thereafter.

- (d) The great economic disparity that already exists between China's provinces on the South Western coast, Hong Kong and the remainder of China, notably the interior regions.
- (e) Income disparities and growing unemployment due to rapid changes in economic policy.
- (f) The emergence of 'sleaze' as an increasingly effective weapon of war - both internally and externally. (Grand reversal of economic warfare patterns by China. China now uses this weapon subtly, and not so subtly, to influence economic policies towards China in the West, especially USA. In contrast India appears diffident, tentative, mostly unprepared and invariably subservient; regardless of the bombast for home consumption).

Implosion Model (Figure 3)

The Implosion Model differs from the Dynamic Expansion Model in that under this model China collapses under the weight of its own size. Such a collapse would be built up from growing internal unrest as well as pressure from outside tending to compress the nation from all directions. At this juncture, it is difficult to visualise such compression taking place with the collapse of the erstwhile USSR and the relative military insignificance of India. Additionally, China has reached a stage of military and economic growth that allows it to be capable of resisting American pressure.

Increasing Disparity in the Military Capabilities between China and India

At the very outset it must be stated that when the military capabilities of the two large Asian countries are compared, the ultimate power projection aims of the two countries are taken into account. It is fully appreciated that each country tailors its military might to match its geo-political aims. In the case of China it is avowedly well on the path to becoming a global military super power. On the other hand, India has no such ambitions - now, or in the foreseeable future. All sensible military planners and India's well wishers would concede that at the very least India must

possess the military wherewithal to ensure the security of South Asia and safeguard its limited interests in the Bay of Bengal and the Indian Ocean.

A number of defence reviews have appeared in the recent past highlighting the burning pace of China's military growth. Without going into comparative figures India must take serious note of the following military developments:

Rapid Increase in China's Military Capability

- * China's military expenditure is growing at ten per cent per year as per Western estimates.
- * China's official defence budget excludes nuclear weapons development, R&D and soldiers' pensions. Nor does it include sale proceeds from armaments. These were estimated at five billion dollars during the period 1991 to 1995.
- * China's rapid reaction force which stood at fifteen thousand in 1988 has expanded to more than two hundred thousand in the last ten years.
- * To give an example of the naval buildup, in 1994, 35 additional warships were under construction. Additional acquisitions planned were 46 warships. This was in addition to the 4 destroyers, 5 frigates and 9 fast attack missile boats launched since 1991.
- * The acquisition of SU-27s and other aerial platforms has been well documented.
- * China has been building a rail link from southwestern Yunnan Province through Myanmar to the Bay of Bengal.
- * Road networks coming into Nepal have been developed at an accelerated pace.

In addition to what has been tabulated above, India and South East Asia, if not the world, should take serious note of the aspects enumerated below:-

* Without any conceivable threat to its territory - now, or in the foreseeable future, China's military expenditure is increasing exponentially. It goes beyond the needs of a military operation across its borders by another country or for any confrontation with its southern neighbours - individually, or collectively.

* China will soon project power by its sheer size well beyond the continent of Asia. USA, Russia, the European Union, the Koreas, Japan, South East Asia, West Asia and even Australia are learning to take into account Chinese sensibilities in their foreign policy projections. In contrast, hardly anybody takes note of Indian sensibilities.

* The Chinese often go to great lengths to underplay their capabilities. They keep saying at every opportunity, "we will never seek hegemony". This has to be seen in the light of Sun Tzu's famous saying "never let out your real intentions. Lull your adversaries by all possible means. Hide your capabilities". Then again "we must conceal our abilities and bide our time" - statement reportedly made by Lt Gen Mi Zhenyu of the Chinese Army. Indian defence planners must pay heed. Disaster overtook the country in 1962. Should Chinese troops cross the border in strength in future they might not be inclined to pull back. Nor would anybody be likely to come to India's aid, the second time around.

* China was not powerful militarily in the 1970s. Yet, it did not hesitate to launch a massive invasion of its (then) fraternal comrade Vietnam. "Just to teach it a lesson", they said. It is recommended that members of the Armed Forces make it a point to read the book *Brother Enemy* by Nayan Chanda. NORINCO, the Chinese ordnance company that supplies the PLA with most of its weapons, is suspected of owning approximately ten subsidiary companies spread around the USA.

* China's export advantage ratio with USA is said to be around 4:1. China has a sophisticated export "strategy" in place (e.g., underselling). Where the Chinese are unable to get straightforward technology transfers of sensitive

technology, they follow a sophisticated pattern of identifying the firms supplying various components to the main supplier/manufacturer of the equipment exported from the West and induce the sub-component supplying companies to set up manufacturing units in China. They know how to achieve their ends - by fair means or foul.

- * Seizure of Mischief Reef from the friendly Philippines in 1995 has given it a forward perch in that region.
- * Myanmar and Cambodia are firmly under Chinese influence. China has exploitation rights over sixty per cent of Kazakhstan's oil reserves, edging out US oil companies Amoco and Texaco.

Preparations in Tibet

- * All but 13 of 6,254 monasteries in Tibet have been closed.
- * The new incarnation of the Panchen Lama chosen by Tibetan monks and the Dalai Lama - 6 year old boy Gendum Choeki Nyima - was made to disappear along with his parents. There is no trace of any of them.

Effect of South East Asian Meltdown on Geo-Politics in the Region

India must take note that the very concept of ASEAN has undergone a sea change from what it was just two to three years ago. A grouping that showed promise of becoming a force to be reckoned with, now remains a shell of its former self. Because of the decline in the economies of the countries of the region - in some cases a catastrophic decline - few people take it seriously these days. Economic debilitation has brought in other types of ills. Firstly, ASEAN has lost its independent decision-making ability because many of its industries and economic assets have been taken over by cash rich foreigners who were the prime movers in engineering the crash in the first place. Most of the ASEAN countries will have to keep conforming to the dictates of Western banking consortia and the IMF for a long time to come. Secondly,

deep fissures have developed within these countries, exacerbated by personal animus between the leaders. It is not easy to visualise how the situation will improve if the personalities concerned do not alter their perceptions of each other. Besides there is a danger of the break up of the largest and most populous country of the group, Indonesia.

There is decidedly a vacuum developing in India's neighbourhood to the East. It will pose major foreign policy challenges for the bigger Asian countries of the region, i.e., China, India and Japan. Should these countries act in concert to prevent the turmoil in the region from becoming endemic, it would benefit the region as a whole. From present indications each country seems to be following its own agenda. Japan could end up as the worst affected as over eighty per cent of its oil requirements flow through this region.

(To be Concluded)

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Role of the Armed Forces in a Democracy : A Review of Fifty Years of Politico-Military Decision-Making

PART II

LT GEN E A VAS, PVSM (RETD)

Need to Manage Strategic Control

After the 1962 debacle it began to dawn on all concerned that India's vital interests have to be faced on five fronts: diplomatic, economic, social, psychological and military. These five fronts or human activities do not operate in watertight compartments. They merge into one another. The diplomatic front is the concern of the Ministry of External Affairs (MEA); the economic front involves the Finance, Industry and Commerce Ministries; the social and psychological fronts are the concern of the Home and Human Resources Ministries; the Defence and Home Ministries deal with security issues arising from external and internal threats. Thus, any national security plan entails the coordination and orchestration by the Prime Minister of these five fronts which are controlled by several different ministries; all are influenced by rapid changes in science and technology.

The cabinet formulates strategic policy and the civil-cum-military administration have to execute policy. If strategy was a simple one-time process of preparing a plan, then the Cabinet Committee of Political Affairs (CCPA), India's apex elected body, presided over by the Prime Minister and composed of all concerned ministers, could sit down and make a national security plan, and issue this to all concerned for action.

Unfortunately, the factors affecting a strategic plan are changing continually due to an opponent's reactions, political pressures,

technology and other reasons. A strategic aim may be constant, but in order to fulfil the aim, the conduct of strategic action has to be a flexible on-going process requiring full-time attention. In a crisis situation, planning has to be implemented on a day-to-day basis on all five fronts.

Because of the need for close integration of several ministries, and the requirement for continual control before and during a confrontation, it is desirable, purely from a managerial point of view, to have a group composed of full-time multi-disciplined advisers with the role of recommending control actions and responses to the CCPA which can then pass suitable instructions to civil-military authorities. This group, call it National Security Council (NSC) or whatever you wish, is not a decision-making body but a managerial tool available to the CCPA, which is the only legitimate body with constitutional authority and responsibility for making national security decisions.

At all stages of the Sino-Indian Conflict (1962), China displayed an impressive degree of strategic and tactical control. It reacted to India's forward policy with carefully orchestrated moves designed to persuade, hinder and coerce. New Delhi had no system to match this approach. Not only were Chinese signals misunderstood and countered by official bluster, they were sometimes even ignored. Those who lacked military commonsense persisted in their romantic delusion that the Chinese were playing a cartographic game. When non-violent actions failed, and the international situation favoured them, the Chinese used force. Mrs Gandhi was a silent spectator of these tragic events and the impact of this on her father. She was quick to learn. She kept her thoughts to herself.

The Indo-Pak War (1965)

After 1962, the Army set about rectifying its material deficiencies. New mountain divisions were raised, and SLR and better artillery were inducted. Incompetent commanders were shifted to other assignments. However, confidence-building is a long term process and cannot be effected by the mere issue of good arms and snow clothing. There are no short cuts to professional excellence.

Pakistan had been closely watching events in India. They assessed that the morale of our armed forces was low after the debacle. New mountain divisions were being deployed on the northern border. On the western border, Pakistan had parity in infantry and superior artillery, tanks and aircraft. India's new Prime Minister, Lal Bahadur Shastri, was an unknown personality. It saw an ideal opportunity to test India's political and military will.

In April 1965 Pakistan moved a regiment of tanks into a disputed portion of the Rann of Kutch. The Army Chief advised the government not to react militarily to this threat as we had no tanks in that area and our main military resources had to remain concentrated in Punjab. The Prime Minister accepted this advice. India agreed to take the Kutch issue for arbitration to the International Court of Justice where Pakistan won its case. Pakistani leaders misread our reactions to the Kutch episode. They took this as further proof that India lacked the political and military will for battle. They began to prepare for another adventure in Jammu and Kashmir. Shastri warned Pakistan that any aggression in Jammu and Kashmir would be treated as an attack on India.

In August, ignoring the Prime Minister's warning, Pakistan infiltrated guerrillas led by army officers into the Valley through a gap between Uri and Poonch. Indian forces, handled with skill, cut off the guerrillas by capturing Hajipir Pass and linking Uri and Poonch. To counter this setback, Pakistan launched an armoured brigade against Chhamb in an attempt to threaten the Akhnoor-Naoshera road and our forces located west of Akhnoor. Shastri ordered the armed forces to cross the international border and attack Pakistan. This order, reminiscent of Nehru's fateful command in 1962, "Throw the Chinese out," was unreal. The armed forces barely had the capacity to defend our borders. The Government, conscious of the 1962 debacle and the dangers of political interference, went to the other extreme and gave the Armed Forces a free hand to do what they pleased. There was no coherent political or military strategy nor any strategic control.

A ding-dong battle took place along the western front. This resulted in an indirect victory for India when a cease-fire was

imposed by the UN. Mr Shastri died shortly after signing the Tashkent Agreement, where policy involving vital security aspects were decided without adequate military inputs. Shastri was replaced by Mrs Indira Gandhi. She had been a silent spectator of both the 1962 and 1965 conflicts. She knew that the CCPA lacked a suitable managerial tool to oversee strategic action and control. She attempted to form a national security council designed to advise the CCPA. She termed this the Apex Body. This was a progressive step but the Prime Minister's concepts were confused and the organisation never took shape.

Our setback in the Sino-Indian conflict had been accepted as a debacle, was analysed and some measures were taken to eradicate the obvious shortcomings. But the outcome of the Indo-Pak War of 1965 was sufficiently ambiguous to deny the nation the benefit of a well-understood failure. A few perceptive officers were able to give a sober assessment of how lucky we had been in the Battle of Khem Karan. The system still lacked two essential provisions for a legitimate role for military leaders in security decision-making : the revival of the defunct Defence Committee of the Cabinet and the Defence Minister's Committee; and reform of our antiquated Defence Ministry and Service Headquarters.

The Indo-Pak War (1971)

During the Indo-Pak War of 1971, Mrs Gandhi's strategic perception and control on the five fronts were superb. She used persuasion, hindrance and coercion on all the five fronts without opening hostilities. Force was only used as a last resort when Pakistan launched an air attack on the western front. The three Services displayed tactical initiative and skill of a high order. The War was a triumph for individuals who transcended the institutional politico-military decision-making system. And it culminated in the capture of 93,000 Pakistani prisoners. Subsequently, meeting between the two PMs resulted in the Simla Accord; once again, however, policy decisions involving vital security aspects were taken without adequate military inputs.

Throughout the period from 1947 onwards, rebels in the north-

eastern states had been keeping the Army busy on low intensity operations. It was clear that these rebels were being supported by arms and training from East Pakistan and China. With the creation of Bangladesh, Pakistani and Chinese interference in the North-East diminished. But elsewhere in India there was political and social unrest. Our victory in the 1971 War could not conceal that we were faced with serious internal law and order problems. Between 1951 and 1970, the armed forces had been summoned to aid civil governance on 476 occasions. The number of armed police and paramilitary forces deployed on internal security duties exceeded the Army infantry's total strength. Coordinating and supervising this mixture of forces and different ministers, Home and Defence, and centre and state governments, posed managerial problems. Mrs Gandhi formed a Policy Advisory Group for that task. Its role and concept was not clearly defined, nor was it properly manned. This second attempt to form a national security council was later disbanded by Rajiv Gandhi when he became the Prime Minister.

1972 to 1975

From 1972 onwards, internal unrest and violent dissent increased. Whilst carrying out their primary task of defending the borders against external aggression, the Army began getting drawn into messy internal turmoils when the administration and police threw up their hands and asked for military aid. Poor governance was allowing a crisis to deteriorate to the point where the Army had to be called in to bailout state governments.

Whilst making heavy demands on the Army for internal governance, it was apparent that the government was still reluctant to reform the system or even revive the two defence committees. The only reason one can think of is distrust of the military. I have discussed how fears of a military coup in the early years of our independence were perhaps justified. However, to persist in these fears forty years after attaining freedom displays an abject lack of political self-confidence. This prevents the healthy growth of military power under responsible political control. This is not to claim that military officers have now become transformed into democratic

saints, but only to emphasise that Indian democracy has matured.

Over the years, India has developed and established numerous, strong and separate centres of government, quasi-government and non-government democratic power: state assemblies, many All India Radio and television stations, the press, trade-industrial-commercial agencies, the judiciary, educational centres, labour unions, municipal corporations, district and taluka panchayats, police and paramilitary forces; the list is endless. Each of these institutions represent vested interests and independent centres of decision-making. At the same time we have held a number of free and fair elections to Parliament, state assemblies and local bodies. The people have learnt to cherish their constitutional rights. Today, it would be difficult if not impossible for any single military or political dictator to control each one of these centres of power without the consent of the people. Mrs Gandhi learnt this lesson in 1976. India is not unique; it is the same in the USA, France, Britain or any other mature democracy.

Nevertheless, Mrs. Gandhi, preoccupied with her desire to cling to power and also deal with the deteriorating law and order situation, declared an Emergency in 1975. This was a political coup which resulted in totalitarian rule. Throughout the Emergency, the Armed Forces upheld their apolitical tradition. Mrs Gandhi soon realised that India could not be ruled for long by dictates alone. When she called for a general election, the people showed that they cared a great deal about freedom by throwing out Mrs Gandhi and her party.

1975 to 1987

Pakistani strategists were watching the Indian scene closely. Three wars had made them realise that direct confrontation with India did not pay. They decided to engage India indirectly; they would arm and train dissident elements in Punjab and Jammu and Kashmir, and foster unrest and terrorism elsewhere whenever possible. This long-term strategy was set into motion by their Inter Services Intelligence (ISI). Whilst these plans were being hatched, Pakistani mountaineers, apparently unconnected with any military

planners, began organising international expeditions into Siachen. These peaceful unarmed activities only came to our notice when reports of expeditions with photographs were published in western magazines. Local Indian military commanders know that Siachen, comprising about 2000 sq km of barren snow and ice, has no strategic significance. However, our mountaineers were indignant as they had been banned from taking adventure expeditions to Siachen, which is Indian territory. If Pakistani excursions continued unabated, this could eventually lead to the world's acceptance that this was Pakistani territory.

Local commanders ordered patrols to move into key passes to dissuade Pakistani mountaineers from entering the area. There appears to have been no CCPA or even Army Headquarter's approval for these local initiatives. The Pakistan Army reacted hastily and attempted to throw out our patrols; this resulted in a military disaster for them. In response to this, our troops had to be reinforced and proper defences built at very high altitudes. Siachen is a good example of how local conflicts can escalate into a major national confrontation when no proper modern politico-military decision-making system is functioning, and where no effective strategic controls are in force. Today, an uneasy peace prevails in the area. Living conditions are harsh and this is costing India a crore of rupees every day and human casualties imposed by the climate. Meanwhile, events in Punjab began hotting up. Operation Blue Star (1984) was a tragic internal security task arising from a failure of timely governance. The Army suffered heavy casualties while clearing the Golden Temple off armed insurgents. Operations in Sri Lanka which were undertaken at that time were a failure of political judgement and intelligence. Our armed forces ended up fighting the LTTE (Liberation Tigers of Tamil Eelam), suffering heavy casualties ; they were then forced to withdraw at the request of the Sri Lankan government. This was followed by successful joint operation by the three Services against rebels in Maldives.

Operations in Sri Lanka and Maldives indicated a strategic shift in the traditional role of the Armed Forces: they were now being ordered to defend India's interests beyond our geographical borders. This radical change of role was decided without even a debate in Parliament, apparently at the behest of individual whims

and bureaucratic perceptions of what constituted India's vital interests. The views of the military were not recorded.

Pakistan at this time began inducting trained insurgents and foreign mercenaries into Jammu and Kashmir in large numbers to support dissidents and engage our security forces in a systematic proxy war. Thus in 1987 our Armed Forces were dangerously over-extended and involved in several widely separated operational areas: in Siachen, elsewhere in Jammu and Kashmir, Punjab, the North-eastern states, Sri Lanka and Maldives. Admittedly we were purchasing expensive modern aircraft, ships and arms to meet these threats. But it made no sense to do this and not modernise the system which had to manage the operations. Concrete proposals were made by the military to reform the system. These proposals were neither revolutionary nor original. Such a system is in use in other democracies and has been functioning in Britain since 1920 onwards. These reforms will not cost money. On the contrary, it will save the exchequer crores of rupees every year, reduce manpower, accommodation, paper work and will enhance political control.

Why Reforms are not Being Implemented

Reforms are not being adopted because of a mixture of reasons: misguided fears of a military coup and a misunderstanding of the legitimate role of the military in decision-making on security issues. Political instability at the Centre also prevents any government from initiating such reforms. Bureaucrats presently occupy key positions in the defence system, functioning as a "wall" between harassed politicians and military officers. Politicians prefer this arrangement as it leaves them free to indulge in their first preoccupation: to cling on to their seats in parliament. Keeping their respective constituencies happy is their first priority. They have no time to worry about reforming a military system which is apparently working satisfactorily.

On the other hand, it is interesting to note that there has at last been general acceptance by most of the major national parties for the need to have some sort of a National Security Council. This is because successive CCPAs have directly had to face the

managerial problems arising from the need to co-ordinate various security agencies from different ministries in complex situations on five fronts. On the other hand, only the Defence Minister deals with the military system, and that too indirectly. He prefers to leave things as they are; reforms are not a vote-catching event. The military, who are the only direct sufferers of the flawed system, have no political constituency; the military is no one's specific concern.

The Armed Forces are a disciplined body which can only put up its proposals through proper channels to the Defence Minister through civil servants who have a vested interest in perpetuating the system. They are past masters at confusing an issue with devious counter-arguments. Subtle hints are made to play on a politician's fears of military dominance, or they will proclaim that the system exemplifies the democratic principle of the predominance of civilian rule over the military, and how this must be maintained at all cost. These misleading statements confuse the issue and obscure the truth that democratic civilian rule means rule by elected politicians and not irresponsible bureaucratic rule which is unaccountable to anyone. It is only the politician who can break down the bureaucratic wall. But political leaders seem helpless, and as Nirad Chaudhuri puts it, "flaps its wings against the bars of the cage in which the bureaucracy has placed it."

All systems, whether democratic or totalitarian, are faced with the problem of balancing political and military power, of building a strong and confident military high command and effective Armed Forces, yet at the same time keeping these forces under strict political control. This is a question of good governance. This cannot be done by building bureaucratic walls but only by establishing modern managerial institutions and fostering trust and mutual confidence in the politico-military system.

The devious methods employed by bureaucrats to down the Services at every opportunity are apparent particularly in the succession of orders issued on the Warrant of Precedence. Emoluments and precedence have never worried me as an individual, although in India this can assume importance in image

building. I can only hope that obviously absurd anomalies and irritants will be removed. But it is beyond the scope of this talk to discuss such matters.

The Current Scene

Today, traditional indifference to the Armed Forces and a conceptual ignorance of the role of the Armed Forces results in a general lack of whole-hearted social acceptance of the military. This indifference is reinforced by a lack of understanding and trust for the military high command at the top political level; an attitude which filters downwards. This is sensed by jawans and young officers. Juniors may not understand the conceptual aspects of politico-military decisions-making, but they know from personal experience how their status has been steadily undermined over the years vis-a-vis the civil service and the police.

Military officers and jawans ask for no special privileges. But they can see that their seniors are helpless in the face of the system. A commanding officer's qualities of integrity, courage, professional skill and discipline are admirable leadership requirements for battle against an external enemy. But these qualities are of little consequence in dealing with simple domestic problems on their home front, in the absence of the rule of law at the village level. The government is aware of this. Army commands have been instructed to hold regular civil-military liaison conferences with chief secretaries and senior police officers in the states in which they are located, to discuss service grievances and mutual problems. This helps in specific cases.

Socio-military problems should not blind us to the many good things which have evolved in India over the past 50 years. I will not elaborate on this. However, whilst congratulating ourselves about these achievements, we cannot deny that our democratic system is being eaten away by corruption and criminals. This results in poor governance which undermines internal security. This is affecting the morale and discipline of the nation in general and the Armed Forces in particular.

Some who despair at this turn of events mistakenly proclaim

that the only answer is a spell of military rule, "because military men are better disciplined and cleaner than politicians and bureaucrats." All Indians are of the same mould. Corruption is a matter of opportunity. Military men are less exposed to the temptations of money power. Anyway, governance is not the role of the Armed Forces. Moreover, history records that dictatorships and military governments are more corrupt and inefficient than elected ones. It is foolish to think of a brief spell of military rule in India. There are other better democratic ways of sorting out corruption. However, a discussion of those measures is beyond the scope of this talk.

I am confident that our democratic society will contain corruption. The process began with the United Front government; it is continuing with the present government. Consequent political and administrative stability will enable the Centre to undertake reforms to modernise the defence system. We can already see this happening. In March 1998, the Defence Minister in the newly-elected BJP-lead coalition government announced the revival of the Defence Minister's Committee after a gap of 26 years. This is a small step in the right direction. But much remains to be done.

Dangers if Reforms are Denied

At this stage, one might ask, "What will happen if our political masters do not carry out further reforms on the lines suggested ?" Nothing dramatic will happen suddenly. But a slow loss of efficiency may take place. This aspect will be better understood by an analogy.

Out-of-date politico-economic policies which prevailed during the past 50 years are being dismantled. The system is being modernised to encourage quick decisions and promote freedom of action to vigorous entrepreneurs. I am not discussing the ideological concepts of command economy versus free-market economy, or globalisation versus swadeshi, but the simple issue of getting rid of senseless red-tape which prevailed during the permit-licence raj. Even this simple change has not come about solely out of conviction. India's political leaders have been compelled to change because of our dismal economic and social statistics when

compared to other ex-colonial nations over the past 50 years; this poor performance can no longer be concealed in an age of global communications.

Unlike economic and social statistics, equivalent data in the case of antiquated security management is not easily available. Admittedly, the 1962 debacle and our painful adventure in Sri Lanka highlighted flaws in our system. The current shortage of 10,000 officers also indicates that all is not well. However, the remedies are not clear. The new government has committed itself to the creation of a National Security Council. However, it has said nothing about the reorganisation and formation of integrated service councils. This omission is astonishing, especially as the Defence Minister has stated that he wishes to increase the Defence Budget and spend crores on modernising the armed forces. Yet, he is apparently not willing to save crores of rupees every year by modernising the Defence Ministry and the three Service Headquarters. Obviously, the management reforms which have been suggested are not understood or accepted by all.

We must presume that there are many who sincerely believe that the present system, though antiquated, is appropriate for India's current state of development. The system, it is argued, has served the nation for fifty years and requires no drastic change. The establishment of NSC along with the revival of the Defence Minister's Committee, and the current practice which enables a Service Chief to freely meet the Defence and Prime Ministers whenever they want to discuss any matter, clearly indicates that there is no question of ignoring the Chiefs, no cause for the military high command to feel neglected, no cause for complaint, and no urgent need for reform.

We must draw a clear distinction between two separate concepts: modernisation of the current defence set up, and giving the military a legitimate institutionalised role in security planning. We must not confuse these two concepts. Undoubtedly the present system functions; but only up to a point. Take the concept of modernising defence management. Those who are against reforming the system are obviously unaware of the depth of resentment

caused by two flaws in the present set up. Firstly, direct institutionalised interaction between the military and politicians is prevented. Secondly, military technocrats who attain their rank and appointments after 25 years of rigorous professional training and experience, when posted to Service Headquarters in Delhi, are irritated to find that military proposals are being supervised and vetted by civilians who have half their service and experience, and who lack accountability.

In the current system, there is constant friction between the military and civil servants who have to vet military matters about which they are often unfamiliar. They try to compensate for this handicap by assertion of authority in the form of queries through lengthy notings on proposals put up by the military. Military officers are forced to respond to such queries; and the files go up and down endlessly; a frustrating, time-consuming and avoidable clerical procedure. Not surprisingly, relationships below the Joint Secretary level, between Defence Ministry and Service Headquarters is one of perpetual confrontation.

There is a popular misconception that this confrontation is the outcome of deliberate intellectual arrogance on the part of the civil servants and professional cussedness on the part of military officers. In fact it is a faulty out-of-date structure which is to blame. An integrated council system will not eliminate human failings or do away with the civil servant who has an important participatory role to play in military management. An integrated civil-military set up will diminish confrontation because it enforces co-operation between the two parties concerned.

Though an integrated system will improve military management, that is not enough. The second concept of ensuring the military's legitimate role in security planning still remains unresolved. Today, at the ministerial level, the military is being kept out of the institutionalised security planning process. Plans are formulated by the cabinet based on the advice of civil secretaries of defence, home and external affairs. Our planners do not seem to be unduly concerned if the final plans lack military inputs or are sometimes fragmented. They know that errors will remain hidden

even from Parliament under the cover of the magic words, "national secret".

Obviously, Service Chiefs have to be consulted on such basic issues as to which type of guns, ships, aircraft or tanks has to be purchased. But there are many other vital long-term security matters on which the professional view is never taken, nor are the Chiefs even invited to be in attendance when these are discussed. To give a few examples: decisions on the Tashkent Agreement, Simla Accord, our nuclear strategy, our missile programme and its proposed relationship with nuclear strategy, the extension of the role of the Armed Forces to include the defence of vital national interests beyond India's geographical borders, our stand on the Non-proliferation Treaty, and the Comprehensive Test Ban Treaty, the Gujral Doctrine and so on.

Diehard detractors of the military will object to this broad concept of legitimate military interests. But that is the precise crux of democratic security planning. It is not being suggested that the government must blindly follow military advice on security policy issues. The point being made is that in a democracy, the military has a legitimate role to play in the formulation of policies which have a security content. It is therefore necessary and wise practice for an elected government to have its military advisers in attendance whenever such policies are being discussed by the cabinet.

Such a procedure functioned in South Block from 1947 to 1962. The nation should be told why this was discontinued. The nation has the right to know who provides the military inputs in the absence of responsible appointed military chiefs. It is certainly the cabinet's privilege to let their military advisers remain silent spectators whilst in attendance; but they should have them there. If military advisers are present and consulted, it is the Cabinet's prerogative to accept or reject their advice. This form of politio-military involvement and interaction reflects trust and is sound democratic management. This is a question of institutionalised procedure and should not depend on the whims of individual politicians. Nevertheless, it must be accepted that there is no constitutional compulsion for this to happen. If a Prime Minister

does not want to have such a system, there is nothing that anyone can do about it.

But we must appreciate the harm that is done to the politico-military ethos by denying this fundamental aspect of democratic governance. This is as absurd as appointing a Chief Scientific Adviser, and then not consulting him when technical issues arise, but leave such decisions to the IAS secretaries concerned. The practice of distancing the military from the security planning process undermines the self-respect and authority of the three Service Chiefs because they are being kept outside the system whilst amateurs pre-empt their lawful military tasks and authority. This is witnessed by subordinates who can see that their seniors are merely required to perform the duties of highly-paid chowkidars. This perception is detrimental to Service morale.

Morale and Efficiency

Morale is maintained by different factors, but is mainly dependent on leadership based on self-esteem and professional confidence which breeds team spirit. Armies, navies and air forces which lack this ingredient cannot win wars. Those who have never served in the armed forces may find it difficult to comprehend the immense significance of this factor of esprit de corps and morale in combat units.

Our volunteer young officers and jawans are wonderful material. Their inherent qualities of loyalty, audacity and discipline can compare with the best in the world. Given proper motivation, they are second to none. Motivation involves more than increased salaries and modern arms. Manpower and weapons have to be wielded into teams. This requires organisation, training and leadership. This can only be provided by dedicated, experienced professionals who have been through the mill. Their task is to motivate and evolve esprit de corps. No leader can do this unless he displays credibility, integrity, professionalism and sets a personal example and commands respect. This cannot happen if the leader lacks self-esteem, feels that he is being distrusted by his political leaders and denigrated by officialdom.

Morale in the Armed Forces may be compared to profit in a business venture. Profit or loss can be assessed in a firm's balance sheet. But the loss of military morale is not easily evident, except to the trained professional eye or in battle. A few retired officers may air their opinions in public, but serving officers will keep their opinions to themselves. So, even if the government fails to carry out reforms, legitimate orders will be obeyed.

The Armed Forces are composed of disciplined institutions. These will continue to deal with day-to-day situations effectively. Everything on the surface will continue to look fine. Spit and polish may even increase; all will excel at ceremonial parades. But there will be a slow loss of professional values. It is only when faced with a major crisis that the nation may come to realise that their expensive military machine is flawed. We may then relearn the elementary lesson of the 1962 debacle : that preparing plans which have a security content without ensuring military involvement is like issuing a cheque on a dud bank account. Civil servants cannot win at a conference table what the military are not able to defend on the battlefield. It should be our earnest hope that this worst-case scenario will never be allowed to re-occur.

Conclusion

For traditional, cultural and historical reasons, there are many detractors of the military system; millions tolerate the Armed Forces as an unfortunate and avoidable expenditure. If the nation means to have armed forces and spend a lot of money on its upkeep, then at least the government and officials ought to try and understand the role of the armed forces in a democracy and support the military system in its legitimate role so that it can perform efficiently.

Warrants of precedence and emoluments are important in their own way, but these are not vital issues; these are merely symptoms of a malaise. Key issues are, firstly, an acceptance by our political leaders and bureaucrats of the concept that in a democracy, the military has a legitimate role to play in shaping policy matters which have a security content. Secondly, a realisation

that the existing Defence Ministry and separate Service Headquarters is faulty; it fosters confrontation between bureaucrats and the military, and prevents the growth of healthy politico-military management. This system must be replaced by a structure which encourages integration and cooperation between all the parties involved. This will not eliminate civil servants but give them and military officers a participatory rather than a confrontational role; it will also increase political participation and supervision.

Tackling these key issues involves three distinct and different steps: a revival, an innovative step and a reform. Firstly, a revival of the Defence Committee of the Cabinet. This can be done immediately and would not cost one paisa. This step will enhance politico-military trust. This step must take place irrespective of whether a NSC is established or not; and irrespective of the revival of the Defence Minister's Committee.

The second step is the creation of a properly manned NSC; this is a managerial tool for the CCPA, to help it formulate, control and direct strategic action. This step involves hardly any expenditure but needs very careful pre-planning so that its conceptual role, manning and functioning is well thought out. It is gratifying to know that in April 1998, the Government appointed a special Task Force to examine these very problems and make recommendations on a proposed NSC. The creation of a NSC will improve the quality of strategic decision making at the highest level.

But these two steps by themselves are not enough. To improve military management at below the cabinet level, a third step must be undertaken: the reform of our antiquated defence ministry and the three Service Headquarters. It would take at least a year for another task force to work out the details for this, and a year for the reforms to be implemented. This step would save the exchequer crores of rupees every year, reduce confrontation between the bureaucrats and the military, foster civil-military participation and co-operation, increase political interaction, control and supervision below the Cabinet level.

Whilst these various steps are being considered or

implemented, the Armed Forces, in addition to carrying out its role of defending the borders and dealing with internal unrest when ordered, will be performing its perpetual peace-time role: its hidden agenda; to modernise itself, and uphold professional values which must never be allowed to wither away. This self-cleansing, self-improvement and motivating process is often forgotten by the public. In a developing country which is being subjected to strong winds of change on the political, economic and social fronts, the process of self-cleansing is no easy task. It is necessary that political leaders, bureaucrats and the public give the Armed Forces whole-hearted support in this.

ARTICLES FOR THE USI JOURNAL

1. Members are welcome to forward articles pertaining to national security and defence matters for publication in the USI Journal. Articles should preferably be around 2,500 words. These should be forwarded in duplicate in double space on A-4 size paper, alongwith a floppy disk (1.44 MB diskette), IBM Compatible, on MS Word for Windows 97. The articles should be sent to the Editor, United Service Institution of India, Rao Tula Ram Marg, Post Bag No. 8, Vasant Vihar PO, New Delhi-110057. Alternately, articles may be sent through e-mail on dirusi@nde.vsnl.net.in. The Editor reserves the right to make alterations.
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Open Source, Virtual and Public Domain Intelligence

MAJ GEN YASHWANT DEVA, AVSM (RETD)

PART II

DISSEMINATION

New Market

“The four consumer communities -- the policy-makers, the acquisition managers, the commanders and their staff, and the public -- each require tailored intelligence, most valued, when it is concise and to the point.”⁵⁴ In the past, intelligence organisations at the national level have only catered to the policy maker. They have been, somewhat, lukewarm to the needs of the acquisition manager and the commanders and the staff in the field. As to the public, less said the better; the attitude has been dismissive on purpose, if not hostile. The times are changing. The intelligence staff needs to work closely with all the customers and improve interoperability to ensure that tailored intelligence and security products and services meet the customers' approbation, both in quality and timeliness. The public must be treated as a real-time partner in decision-making in foreign, domestic, and even defence policies.

Ninety per cent of the information reaching a typical consumer, whatever be his level and importance in decision hierarchy, is unclassified and unanalysed.⁵⁵ Bulk of it comes through the TV, the radio and the newspaper. Further, neither the consumer nor the producer of intelligence has yet developed “a capability for discovering, discriminating, distilling, and digesting intelligence within this overwhelming information environment replete with multiple sources of conflicting information.”⁵⁶ Besides, consumers tend to suffer from information overload and fatigue.⁵⁷

Part II of the text of the paper presented by Maj Gen Yashwant Deva, AVSM, former Chief Signal Officer Southern Command, at the National Security Seminar, at the USI, New Delhi on 18 November 1998.

Policy makers require open source intelligence that gives responses and reactions to their decisions from the public. The public, on the other hand, has to be constantly fed with intelligence from reliable government sources about the rationale of foreign and domestic policies. It is a failure of the intelligence that the euphoria generated by Pokhran II was allowed to wane, and not suitably harnessed. Public perceptions of the dangers to national security are not the same as that of the government. This is because the public is not recognised as a legitimate consumer of information, and is left to the vagaries of the media. In the days gone by, kings and rajas engaged spies to assess their popularity and gain intelligence about the public reactions to their governance. They even spin-doctored popular sentiments and garnered public support to a particular response option to a crisis.

Another vital consumer is the businessman. It is significant that China, though a socialist country, has greater awareness about gathering, sifting and distributing market intelligence, than we, who boast of greater commitment to liberal economy. Economic espionage is China's forte. It now ranks as the biggest threat for American firms, eclipsing Japan and France. The ranking is the result of a yet unreleased survey conducted among 1,300 major US companies by the American Society for Industrial Security (ASIS), an association concerned with corporate security.⁵⁸ "Chinese industrial spying is believed to run the gamut from routine competitive intelligence gathering...to the theft of company trade secrets from offices and labs."⁵⁹ One does not have to emulate China in this respect. There are legitimate ways of gathering economic and market intelligence and this should be an agenda for the external intelligence.

Commanders need access to unclassified open-sources for area study, contingency planning, civic action and assignment of missions for classified collection. It is erroneously believed that their interests are confined to military intelligence. In the 21st Century, the importance of infowar will grow, and epistemology⁶⁰ and situational awareness will command knowledge on every conceivable subject.

Customer Relationship

“There is no phase of the intelligence business which is more important than the proper relationship between intelligence itself and the people who use its products.”⁶¹ Oddly enough, this relationship, which one would expect to establish automatically, requires a great deal of conscious effort and public relations to do so. The policy, and not the other way round, should drive intelligence. The burden of establishing this mutual understanding between the intelligence operator and the user falls on the latter.

Policy-makers need support from intelligence to help deal with uncertainty and rely on analysts who appreciate this aspect of the decision process. Analysts are useful only when “they clarify what is known by laying out the evidence and pointing to cause-and-effect patterns; carefully structure assumptions and arguments about what is unknown and unknowable; and bring expertise to bear for planning and action on important long-shot threats and opportunities.”⁶² Intelligence must be integrated more closely with other functions of government, such as law enforcement, to achieve shared objectives.⁶³ Further, in a mixed economy, intelligence has another vital mission to perform, that is to keep the economic directorates and the ministries informed of the state of the economy in target and competitor countries.

Uncertainties can be addressed by the expert systems, so long as the data is scrupulously and objectively stored. “Intelligence products that emphasize prediction over explanation and opinion over evidence,” have little use for the policy maker.⁶⁴ There is need to expand “pull” dissemination capabilities⁶⁵ to enable the policy maker or customer to initiate real-time requests for intelligence in response to emergent requirements to manage crises. Obviously, this demands interactive databases and highly developed warehousing and retrieval software. Information mining is an art, requiring, firstly, a filtering technique to get the right information, and, secondly, the knowledge where the resources are available and how the information is stored. It should enable the customer to initiate a single request and the system to search all the databases of the intelligence conglomerate for the right answers. One way to

cut down on queries is to list FAQ (Frequently Asked Questions), which has become increasingly popular on the Internet.

"The Intelligence Community has to get used to the fact that it no longer controls most of the information."⁶⁶ We can neither rely exclusively on classified sources for the bulk of intelligence, nor can the users or consumers take it for granted that their intelligence needs will be met by the agencies as they have traditionally operated. This is true of the military commanders and the staff, too. Each consumer entity should have its own database, a part shared with the others, a part not shared. The size of the latter must be kept small in order to avoid compromises.

Intelligence Flow

As communications break the chain of command, the hierarchy, too, will no more shackle the intelligence. There is convergence towards unique structures that permit intelligence to flow. The answer to co-ordination lies in networking. Systems will blend because of the sharing of databases and the reach of communications. Policy makers at the national level and commanders in the field will see the same "data". The possibility of "zoom in and out or drilling into and out of areas of interest will continue to make the present notion of tactical and strategic intelligence somewhat ambiguous "⁶⁷

Obviously, drastic changes are in the offing in the way information flows and its real-time dissemination. The information revolution sets in motion forces that challenge the intent and purpose of many institutions. Intelligence organisations cannot be an exception, more so, as they themselves are the dispensers of information. Communication connectivity, networks and highways disrupt "the hierarchies around which institutions are normally designed,"⁶⁸ and lead to crossing borders, redrawing the boundaries, besides, compelling the closed systems to open up."⁶⁹

Cartographic Intelligence

Distribution of maps and their availability for operations has

been India's Achilles heel. The defence services have been launched into operations without maps and geospatial imagery. Even when maps were available, their distribution was miserably faulty, and was the cause of many of our failures. There cannot be a second opinion on the urgent need to address this failing.

In the US, the National Imagery and Mapping Agency (NIMA) looks after coherent management of US imaging and mapping capabilities. It was created as a combat support set-up of the DoD in 1996. It combines unto itself the Defense Mapping Agency, the Central Imagery Office, the Defense Dissemination Program Office, and the National Photographic Interpretation Center in entirety; and imagery exploitation, dissemination and processing elements of the DIA, the NRO, the Defense Airborne Reconnaissance Office (DARO), and the CIA, in parts.⁷⁰

We have created an organisation for production of digital maps and imagery. However, this alone may not meet the expectations of the commanders and the staff in the field. A real-time imagery transfer system is badly needed. We have the capability to put it in place; it is merely a question of will to opt for non-ruggedised commercial hardware. There will be exacting demands on timely, accurate and precise imagery and geospatial intelligence for an appropriate response to the future environment, be it for national decision-making or military operations.

The Government has accepted the views of the Task Force on IT and SD and has directed that the "recommendations of the TG-MAP committee for map and GIS (Geographic Information System) data policy approved by the Committee of Secretaries under the Cabinet Secretary shall be notified by the Ministry of Defence expeditiously."⁷¹ Desirable as it may appear from the larger interests of the country, open circulation policy, without monitoring of the distribution system, could be a matter of serious concern. Invariably, maps of sensitive areas first land up with the terrorists and spies, before they reach the legitimate users.⁷² Besides, we must not forget that India has been a victim of cartographic aggression in the past, and we need to remain ever vigilant on that score.

COUNTER INTELLIGENCE AND NETWORK SECURITY

The primary threat of intelligence gathering comes from the ISI of Pakistan and *Gujiā Anquān Bù* of China. Whereas the activities of the former are widely publicised, little is known or discussed about the latter. Chinese capabilities for organising and conducting espionage are highly refined. In a façade of innocent denial, China has been gathering vital information and has concentrated on economic and technology spying to the same degree as it does on politico-military affairs, using professionals, students and scientists. "Significant damage is done by 'freebooters' who pass on information to curry Beijing's favor or, as is often the case, for profit."⁷³ The extent of chicanery of this agency can be gauged from the fact that it penetrated the US political system and financed the democratic elections, allegedly taking its pound of flesh in return. While spying in the Western countries is more to technology snooping, particularly in the fields of IT, biotechnology and defence industries, in India, its nefarious designs are to spread misinformation, create disturbances, destabilise the country's political system and not to let India emerge as a competitor.

The CIA and the NSA of the US are equally active in India, their main interests being India's progress in sensitive technologies and military preparedness. The former has a large presence in the form of moles and conscious keepers in almost all the government departments, the media, industry and political parties, while the latter's focus is on communications and IT. Since the eighties, it has been running a project called "Echelon" in conjunction with Sigin organisation of four of its allies from the "white" Commonwealth countries. The five cooperating agencies are:⁷⁴

- * National Security Agency (NSA) of USA.
- * Government Communications Headquarters (GCHQ) of UK.
- * Government Security Establishment (GSE) of Canada.
- * Defence Signal Directorate (DSD) of Australia.
- * Government Communications Security Bureau (GCSB) of New Zealand.

“Echelon” intercepts e-mail, fax, telex and telephone conversations and its targets mostly are non-military, viz., governments, organisations, businesses and individuals, virtually in every country. It conducts bulk, indiscriminate interception, and uses computers to identify and extract messages of interest. Intercept facilities have been established around the world, which enable it to tap all the major components of the telecommunication network,⁷⁵ even track individuals, as they switch networks. A case in instance is that of Osama Bin Laden.

The task of intercepting traffic of the countries of South Asia is handled by the agencies belonging to the US, Australia, and New Zealand. Besides collecting intercepts through *Intelsat*, the focus of communication intelligence (Comint) has been on microwave networks converging on the metros through facilities installed at the embassies. All code-breaking tasks are handled by the NSA.⁷⁶ Ever since Pokhran II, when these intelligence agencies were outsmarted, all eyes and ears are focussed on India.

Pakistan and China, too, are running an elaborate system of Sigint. The former has acquired a fair degree of expertise in hacking. The ISI is known to have employed amateur hackers to help spoofing and manipulating data on the Internet.

The task force on IT and SD has made certain recommendations⁷⁷ for liberalising the usage of radio and Internet access, which have been notified. Security has been given a short shrift. It appears that no advice was sought from intelligence or security agencies that have the experience of fighting cyber battles or conducting counter intelligence operations. The LTTE misused the citizen band, maritime frequencies, and HAM radio for passing illicit communication traffic. It intercepted radio traffic and telephone conversations in Tamil Nadu and other southern states. It procured walkie-talkies and components to make communication and interception equipment from the vendors in India. It ran so-called electronic workshops where it made radio controlled improvised explosive devices (IEDs). All propaganda material was churned out from Indian soil and sent to England over ISTD, high power HF radio and other channels,⁷⁸ and our intelligence agencies turned a Nelson’s eye to such activities.

It is a pity that we have refused to learn the lesson that electronics can be more deadly than explosives. Whereas, possession, transfer and vending of arms and ammunition are prohibited and laws pertaining to them are enforced, there are no restrictions on transmission and reception of subversive, criminal and anti-national information through electronic means. Whatever checks had hitherto existed are sought to be diluted. With the new provisions⁷⁹ coming into force, cyber crooks, spies, hackers and insiders will have a heyday, unless we are able to have security systems installed on the networks, make cyber laws, and create a deterrent monitoring setup endowed with legal powers.

In India, the legal position regarding telephone tapping is given in a judgment of the Supreme Court that privacy is a part of the right to life and personal liberty enshrined under Article 21 of the Constitution. The Apex Court recognises that telephone tapping may be necessary to detect and prevent crimes, e.g., espionage, drug trafficking, gunrunning, and terrorism. Section 5 of the Indian Telegraph Act 1885 empowers interception of telephonic conversation in certain situations. This has often been misused and abused, and seldom invoked in the interest of national security. It is strange that for over a century, we did not consider it necessary to revise this dated and controversial act or amend its opprobrious provisions. The Apex Court has lent safeguards to Section 5 (2) of this Act; viz., one, the authority to sanction tapping cannot be other than the Home Secretary of the Centre or the state as the case may be; and two, before passing an order the authority must determine whether the information sought cannot reasonably be acquired by other means. This historical judgment protects individual privacy and yet, concedes to the State the right to intercept under certain conditions.

RECOMMENDATIONS

In the 21st Century, knowledge of computer system architecture, data structures and algorithms, database management systems, networking, Internet and computer security systems are the barest essential. All intelligence

officers, be they in the civil or military fields, should have a thorough knowledge of information technology and should preferably come from information science stream or computer application stream. A sizeable proportion of non-officer cadre should undergo courses at Foundation (O Level) and Advanced Diploma (A level) of the DOEACC, a scheme being conducted by the Department of Electronics. Intelligence organisations should shift their bias from Humint to Techint, and must develop expertise in distributed and parallel systems, modelling and simulation, real-time systems, advanced networking, image processing and computer vision, Cryptanalysis, AI, VR and ER, *inter alia* other subjects.

- * There is a need to create an intelligence organisation similar to the National Security Agency of the US, by pooling the Sigint resources at the strategic level, and placing under it a research group on cryptology. It should be responsible for all aspect of network security, and cyber policing as visualised in the report of the Task Force formalised in the Gazette Notification.⁸⁰
- * Make interactive databases and adopt modern tools of warehouse archiving and retrieval. The answer lies in opting for distributed databases with search engines for open information, and airtight centralised databases with well-controlled access for hard-core intelligence.
- * Create networks, integrating intelligence with policy-making and command and control functions. All diplomatic missions, intelligence offices and command posts should become paperless with computers and terminals laced with self-destruct capabilities.
- * A national policy on cryptography should be formulated and adopted. Cryptanalysis should be strengthened with appropriate organisational structure and high power computing assets.
- * A task force similar to the one on IT and software develop-

ment (SD) or a commission similar to the one on the Roles and Capabilities of the US Intelligence Agencies should be constituted with adequate representation from the defence services and technocrats to suggest a total overhauling of the existing intelligence organisations and review their working. Manpower should be severely cut down and instead, computing, real-time communications, and networking facilities appreciably increased.

- * There is a need for strengthening public relations and media support. Intelligence should return to its supportive role in the affairs of the government, whereas strategy, diplomacy, technology and economics should take over the lead part.⁸¹
- * Reliance on agents and human analysts should be reduced. Instead, greater importance and budgetary support should be lent to acquisition of sensors and processors and adoption of scientific methods of analysis, including expert systems. Covert⁸² actions should be eliminated, except where these are required for national survival. Greater stress should be laid on analysis, separating it from intelligence operations, so that analysis is independent and is not used to promote operations.⁸³

Conclusion

The explosion of information technologies has set in motion a virtual tidal wave of change that is profoundly affecting organisations and individuals in multiple dimensions. As the cost of computing and communications has nose-dived, it is highly cost effective to adopt and utilise information technologies. This is particularly true of intelligence. Besides being not reliable, Humint is prohibitively expensive.

“Technology begets doctrine and doctrine begets organisation”.⁸⁴ Technology is the start point for any review of the intelligence set-up. Its influence will increase and drastically impact on, both, doctrinal and organisational changes in the 21st Century. The Government of India has laid down the IT agenda. There are

obvious lacunae in the policy from the security and intelligence point of view. While addressing them, let us not forget the goal of making India the IT superpower. Intelligence will become more technology oriented and, whether we like it or not, the manpower recruited to the intelligence agencies, be they civil or military, will have to be highly technical.

Priority needs to be accorded to the creation of paperless offices and command posts, databases, and networks, including C³I systems and Intranets. Commercial hardware should be used with adequate network security. Emphasis should be on open source collection, curbing the tendency to project information collected from an open source as classified intelligence. Covert actions should be confined to only those authorised by the policy maker. In the light of proliferation of hackers and crackers, the Government should clearly lay down policies on cryptography and cyber security.

We need to remove mutual distrust amongst the intelligence agencies and the tendency to "score" and to snoop on each other's data. We need to delineate the charters, scrupulously avoiding duplication. Responsibilities have to be clearly defined, jurisdictions decided and liabilities made known for the many tasks and facets of intelligence.

Finally, the public must be taken into confidence on activities of the foreign intelligence agencies⁸⁵ and efforts of own agencies to counter them. Public relations and media management is as important in intelligence as in other activities of the Government.

NOTES

- 54. n. 2.
- 55. Ibid.
- 56. Ibid.
- 57. Yashwant Deva, "Infowar: The Challenge of Spin doctoring," *Combat*, August 1998, pp. 28-29.
- 58. "China: Ministry of State Security (Guojia Anquan Bu)," *Jane's IWR Daily Update*, Vol. 5, No. 48 of 03/12/98, quoting *Fortune Magazine*, 30th March edn.

59. Ibid.
60. Epistemology means "the entire organization, structure, methods and validity of knowledge." In layman's language, it means everything an individual or group holds true or real, no matter whether that which is held as true or real was acquired as knowledge or as a belief.
61. Sherman Kent, *Strategic Intelligence for American World Policy*, (Princeton University Press, 1949), p.180.
62. Jack Davis, "The Challenge of Managing Uncertainty: Paul Wolfowitz on Intelligence Policy-Relations." Paul Wolfowitz is the former Under Secretary of Defense for Policy. In February 1995, President Clinton appointed Wolfowitz to the Commission on the Roles and Capabilities of the US Intelligence Community.
63. *Report of the Commission on the Roles and Capabilities of the US Intelligence Community*, n. 28.
64. n. 58.
65. n. 2
66. Richard Kerr , the former Deputy Director of Central Intelligence and former Director of Intelligence of the CIA. He was speaking at OSS '97, "Global Security & Global Competitiveness: Open Source Solutions", in Washington, D.C. on September 5, 1997.
67. n. 43.
68. John J Arquilla and David Fronfeldt, "Cyber War is Coming", *Comparative Study*, Vol. 12, (1993) pp. 141-165
69. Ibid.
70. n. 34.
71. Section 104 of the Gazette, n. 13.
72. A parallel could be drawn with the press report that the highest penetration ratio of "cellular" in the country was in Tihar Jail.
73. n. 58.
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75. Ibid. Two lessons are drawn from this; firstly, that security of all communication systems is important, and secondly, that reliance by the defence services on public communications and market driven security poses serious threats. There is an obvious need for greater role for the Services in protecting the national information infrastructure. See also Alan D Campen, "Vulnerability of Info Systems Demands Immediate Action: Reliance by Military on Commercial Communications Infrastructure Poses Significant Peril to United States." *National Defense*, November 1995, pp. 26-7

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82. "A covert operation is one, where the country's intelligence agencies do something, which conflicts with what its policy and values are purported to be." This explication is attributed to Roger Hilman, who is contributing a chapter titled, "After the Cold War: The Need for Intelligence." in the book cited above.
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'Information Superhighway' and the Indian Armed Forces

LT COL A N GUDI

Introduction

The closing years of the second millennium are in the throes of the birth of a new era - the Information Age. Futurologists Alvin and Heidi Toffler have alluded to it as the 'Third Wave' while others call it the 'Information Revolution'. It is characterised by knowledge, data and information replacing raw materials and labour as the key economic factor. Information superhighway is a popular term used for the complex networks of multichannel electronic pathways interconnecting people, computers and machinery by voice, data, telex, facsimile, video, etc., across widely separated regions and nations.

Even the third wave warfare would be characterised by an increasing dependence on knowledge, data, information and communications infrastructure as the battle winning factors. Armed forces which most effectively and speedily adapt to the coming times and adopt the emerging technologies are the ones that are likely to be successful in the Twenty First Century.

The aim of this paper is to analyse the impact of the revolution in information technology (IT) on the command style and hierarchy in the Indian Armed Forces.

Information Technology Revolution

The ongoing IT revolution has its roots in earlier revolutionary developments in the fields of solid state physics, micro-electronics, microprocessors, personal computers (PCs), software engineering and digital communications.

Manifestations of the IT revolution are woven into our every

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day lives by way of satellite communications, particularly international telephone and telex circuits and multichannel satellite television, proliferation of small, powerful PCs that outperform the main-frame computers of the eighties, the omnipresent INTERNET, computerised rail and air reservation and banking facilities, video conferencing, animation graphics, cellular phone, online data bank services, compact disc (CD) and optical disc memories.

The IT revolution has in its womb goodies such as videophone, interactive cinema and television, natural language interface and artificial intelligence for computers and robots, paperless offices, global and regional networks and the all-in-one communication, computational and entertainment system – the Integrated Services Digital Network (ISDN).

Impact on Society and Economy

The information technology revolution, like the industrial revolution earlier, has major long-term socio-economic, organisational and military implications. The likely changes are the emergence of information and data as the key sources of power in all fields of human endeavour. The means of distribution and restriction of knowledge and information, therefore, become critical for a nation's overall growth and development, not to forget its pursuit of power.

Knowledge as the Key Resource

With access to appropriate data, information and knowledge, it is possible to reduce the requirement for all other resources, thus leading to economic development and power. Used effectively, knowledge, information and data, therefore become the ultimate substitute for other inputs and hence the key resource; moreover, unlike all others it is inexhaustible.

Key Assets

There is a growing realisation that in the coming years of the information era, the key assets of any company or establishment

would be the ideas, insights and information in the heads of their staff and not real estate, stock or capital equipment as in the industrial age.

Heterogeneity and Scale of Operation

After the mass production, distribution and marketing that characterised the industrial age, the thinking now is that such scales are not sustainable. 'Smaller the better' appears to be the slogan of the information era. This can be witnessed in almost all fields, viz., proliferation of a large number of TV channels catering to ever smaller groups of viewers, and automated assembly lines capable of endless variations producing a larger variety of products catering for different tastes of smaller groups of customers. Bigger companies employing thousands of workers engaged in mass-production may split into a number of smaller companies employing fewer workers and producing smaller numbers but larger varieties of products.

Work Force

There is a sea change sweeping the labour market. More and more unskilled labour is being replaced by robots and automated machinery. The erstwhile indirect labour comprising professionals and technicians are increasing in number, importance and cost. The cost of replacing skilled labour is also increasing due to rising specialisation.

Key Qualities

In the twilight years - the dusk of the industrial age and the dawn of the information age, entire societies and economies are in a state of flux. Moreover, the emphasis is shifting to knowledge and information as the key resource. In such an environment, the winning factors for any organisation are the twin qualities of initiative and innovation in all endeavours. Development of initiative and innovation amongst the employees becomes the key result area of human resources development for success in any establishment or company.

Organisational Structures

Standard rigid organisational structures of the industrial age based on specialisations and areas of operation are giving way to holistic inter-disciplinary structures based on functions, processes, project teams and profit centres. The emphasis is on flexibility and capability to take quick decisions rather than rigid chains of command.

System Integration

Growing complexity, specialisation and heterogeneity in all fields require a high order of system integration as a sine qua non for success. In turn, the systems integration approach requires the flow of huge amounts of information between the subsystems.

Speed

Time has always been recognised as one of the key resources. But in the information age, urgency is the hallmark of all successful endeavours, the primary reason being the ever increasing speed in the flow of information.

IMPACT ON WARFARE AND ARMED FORCES

It is said that war is nothing but the extension of politics by other means. Also, the way a nation makes war and prepares for it is closely related to the way it makes wealth. Moreover, the armed forces of a nation are a representation of its society. Hence warfare and armed forces are deeply affected by changes in polity, economy, society, and, most of all, technology. Thus the impact of the arrival of a new era is bound to revolutionise warfare and the armed forces worldwide. A preview of the coming changes were witnessed during the Gulf War of 1990.

Key Resources and Key Targets

As in the case of society and economy, in the field of warfare also, knowledge in all forms has come to rival weapons and

tactics in importance. Although knowledge has always been recognised as a battle winning factor from the times of Sun Tzu, its criticality is now growing exponentially due to technological developments in the means for its acquisition and distribution. According to Col Alan D Campen (Retd), USAF, the author and editor of *The First Information War*, the Gulf war "was a war where an ounce of silicon in a computer may have had more effect than a ton of uranium". The resources deployed, viz., Airborne Warning and Control System (AWACS), Joint Surveillance and Target Attack Radar System (J-STARS), the more than 3000 interlinked computers in the war zone, and the selective targeting of command, control and communication centres are ample evidence of a growing recognition of knowledge as the key resources to both sides.

Key Assets

Key assets of the armed forces in the information age are likely to be intelligence, command, control and communication facilities, training and morale of men as compared to the vastly greater emphasis laid on the sheer numbers of weaponry and hardware in the industrial era.

Heterogeneity and Scale of Operation

The shift in emphasis towards a variety of precision guided weapons chosen for different target systems and away from the weapons of mass destruction is a very easily discernible trend as we march into the information age. The consequent reduction in the required number of weapons and combatants results in a reduction in the scale of operations, while at the same time increasing their complexity, reach and impact. Today, one sortie of an F-117 with one bomb can accomplish what it took 4,500 sorties of B-17 bombers dropping 9,000 bombs in World War II or 95 sorties and 190 bombs during the Vietnam War.

Manpower and Key Qualities

Smart weapons require smart soldiers. Poorly educated soldiers are as much a drag on a military as ill-educated workers in a modern industry. The emphasis is clearly on education,

technical skills, communication skills including language, initiative, intelligence and innovativeness. There is also a trend towards an increase in the number of troops required for knowledge and information related duties vis-a-vis those for direct combat in all the armed forces.

Organisation

While the enhanced capacity for the quick flow of large quantities of information in the armed forces can be used to strengthen the top-down approach with the top levels now having the capability to micro-manage unit and sub-unit level operations, it may in certain cases lead to the dangerous tendency of interference in command of units by higher formation commanders from the rear. However, the forward looking armed forces are going in for enhanced autonomy and authority to the local commander with adequate support from the higher headquarters as they have the necessary information.

Systems Integration

War has always been a complex business warranting an integrated systems approach. Now that the technical capability for integrated functioning is available and the response time for decision making has reduced due to a higher tempo of operations, the emphasis on systems integration has vastly increased. This requires a far greater investment in the new infrastructure, viz., communications and computers.

Tempo

That the pace of operations has increased manifold is undisputable. And this trend is likely to continue. This is due not only to faster aircraft, better tanks and vehicles and highly manoeuvrable ships and submarines, but enhanced communications and intelligence facilities have also contributed substantially. This has shrunk and is continuing to shrink the decision loop, thus increasing the tempo of operations.

COMMAND STYLE AND HEIRARCHY

Existing Command Style in the Heirarchy

The existing style of command in our army is characterised by detailed planning for two lower levels and the issue of exhaustive orders including coordinating instructions to the immediately lower echelon. It relies on the rigid vertical chain of command both for upward flow of information and downward flow of orders and policies. Its effectiveness is directly related to the degree of certainty of the information available from the battlefield.

The existing structure favours centralised control as all information has to flow vertically up to the central headquarters before it can be passed to others. It also suffers from a lack of responsiveness to dynamic situations as all proposed actions are required to be approved up the chain of command beforehand.

It leaves little room for manoeuvre to subordinate commanders as detailed planning is carried out by a higher commander for two lower levels without adequate participation of the second tier of commanders. Therefore, the opportunities to develop initiative and innovativeness of subordinate commanders, particularly at junior levels, are not adequate.

Directive Style of Command

This is a style of command that is based on mission-oriented orders and effective delegation of authority. The underlying reason is that battlefield is a scene of uncertainty and, therefore, a style of command that tries to exploit the uncertainty rather than demand certainty for its effectiveness is the one that is likely to succeed. It relies mainly on the commander to inspire his subordinates and to effectively communicate to them his concept of operations, the result that he desires and the resources which can be made available, leaving a large measure of freedom to the subordinates. Equally, the subordinates need the ability and the gumption to seize and exploit opportunities as they arise while operating within the overall framework of time, resources and geographical area set out for them.

Basis of Directive Control

- (a) Evolution of the operational plan as a series of possibilities and contingencies and tasking of subordinates in such a manner that they can prosecute the operations to achieve the commander's objective without the need of issuing a detailed and exhaustive plan.
- (b) Deliberate discussion extending to a minimum of two higher levels and two lower levels to evolve the operational plans and achieve a unity of thought and tuning of minds.
- (c) Every commander regards his superior's intention as sacrosanct and makes its attainment the underlying purpose of everything he does.
- (d) Complete freedom of action to the subordinate commanders within the overall framework of time, resources and area.
- (e) Immediate and full reporting by subordinate commanders to keep the higher commander and staff in the complete picture all the time.
- (f) Forward command exercised by the commanders by locating themselves well forward to get the feel of the battle as it progresses.
- (g) Bold and innovative junior leadership combined with effective Standard Operating Procedures (SOPs) and battle drills are the means of implementing the plans by directive control.

Recommended Changes

Technologies provided by the IT Revolution to the armed forces make possible a style of command which was earlier regarded in many circles as not practicable. Changes in the command style and hierarchy recommended for full exploitation of the IT revolution are given in succeeding paragraphs.

Flow of Information

The IT revolution makes possible the free flow of information multidirectionally. Only a command structure which encourages such information interchange stands to benefit fully from available technology.

Collaborative Planning Process

The IT revolution makes it practical to involve all concerned in the initial planning process. 'Two levels up and two levels down' advocated in the directive style of command is now easily achievable.

Participative Decision Making

The IT revolution makes it easier to make a decision with the participation of all commanders concerned, in less than the time previously required.

Avoid 'Forward Command from the Rear'

With the help of the revolutionary developments in IT, it is now possible for a commander sitting in the comfort of the rear to get full and accurate reports (heretofore considered impossible) and micromanage the operations. This is nothing but an attempt to exercise forward command from the rear, which can be extremely harmful to the success of the mission. No amount of data and reports can be a substitute for a commander getting the feel of the battle from his forward location.

Guard Against Bypassing of Channels

As the IT makes it possible for commanders at any level to get full information about any subordinate level and also communicate orders to him directly, bypassing of channels is a very tempting possibility which must be guarded against.

Filter Information

In order to avoid getting overwhelmed by a deluge of information, every commander must evolve a set of filters for

himself to suit each situation. The IT revolution makes it possible now to automate these filters to a large extent.

Greater Delegation

The new technology now makes full, timely and accurate reporting by subordinate commanders not only feasible but also unavoidable. This facilitates close monitoring by the higher commander. Hence it favours granting of greater freedom of action to the subordinate commanders, while retaining the ability to monitor the situation closely and intervene if and when required.

Span of Control

Span of control, now generally restricted to three or four (viz., three platoons under a company commander and four companies under a battalion commander and so on) can be increased due to enhanced information processing capability. This will lead to savings in the overheads for command and control.

Organisation of Staff

Automated information processing capability tends to make many middle and junior levels of staff redundant. It will be possible to have a flatter organisation of staff. The staff will have to be reorganised based on information flow rather than watertight compartments of their functions as at present.

Conclusion

The IT revolution has been unprecedented and is comparable to the industrial revolution in significance. It has resulted in the birth of a new information era with widespread ramifications on society, economy, warfare and the armed forces.

Arrival of the information superhighway in our armed forces is an inescapable certainty. It is now time to analyse its effect on the command style in the hierarchy and evolve changes so that the new technology is fully exploited. Success in the next war will go to the side which has an information advantage.

The revolution in IT encourages free multidirectional flow of information, collaborative planning, participative decision making, greater freedom of action at all levels, and greater delegation of authority to subordinate commanders while retaining the ability to monitor events closely. In short, it favours the directive style of command.

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A Department For Welfare of Ex-Servicemen : A Proposal

LT GEN K BALARAM, PVSM (RETD)

Introduction

Currently there are 12,50,910 ex-servicemen on the rolls. Their families and dependents as well as next-of-kin of deceased servicemen and ex-servicemen, are about 50,00,000. The annual additions to this population are about 50,000 servicemen who retire every year and about 2,00,000 who form their families and dependents. The bulk of ex-servicemen are personnel below officer rank (PBOR) and a large proportion of annual retirees is in the age group 35 to 40. The re-settlement and provision of other forms of essential welfare is a problem of some magnitude.

Basically, the problems of ex-servicemen are :-

- (a) Provision of employment or proper re-settlement after retirement.
- (b) Pre-retirement training for re-settlement.
- (c) Medical care.
- (d) Prosthetic rehabilitation.
- (e) Geriatric care.
- (f) Other aspects of welfare like provision of canteen services, vacation of own house for occupation after retirement and so on.

The responsibility for looking after the welfare of ex-servicemen is that of the Government of India (GOI), through the Ministry of Defence (MOD). To discharge this responsibility, the MOD has

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an organisational structure and some agencies, but has not been effective.

The aim here is to examine the existing structures for looking after the welfare of ex-servicemen and suggest structural changes and other innovations to provide effective welfare to ex-servicemen.

During the discussion, the members of the panel, one from each Defence Service, many distinguished retired and serving senior officers including the Adjutant General and the Director General Resettlement, presented their views. The important points that emerged from these presentations have been collated in these proceedings without any attributions to individuals. Comments on Organisational Structure, Resettlement problems, Medical care and other welfare measures have been dealt with as separate parts.

Organisational Structure

The existing organisation has two 'Vertical' composite parts with some 'Horizontal' linkages. The Central Government (GOI) through the MOD is at the apex. The composite parts are:-

- (a) The Sainik Board Structure.
- (b) The Directorate General of Resettlement.

Sainik Boards

The 'Kendriya Sainik Board (KSB)' exists at the highest level of this structure. The Chairman is the Defence Minister and it has a total of 66 members of whom some are ministers of the Central Government who can help in the resettlement and welfare of ex-servicemen, ministers from every state of the Union who are in charge of resettlement and welfare of ex-servicemen in their respective states and the three Service Chiefs. Some ex-service men and others, including a lady, are nominated members. The Director General of Resettlement is the Secretary. The KSB meets once a year, formulates the 'Policy' on matters concerning ex-servicemen and reviews progress on implementation. The 'Rajya

Sainik Board (RSB)' is the State level equivalent of the KSB and, generally the Chief Minister is the Chairman. The members are the Finance Minister, the Minister in charge of Resettlement and Welfare of ex-servicemen and the Deputy Commissioner (or Collectors) of Districts who are ex officio chairmen of 'Zila Sainik Boards (ZSB)'. Some RSBs also have nominated ex-servicemen as members. The representative of the DGR located at the Army Command Headquarters which provides military assistance to the state and the Area and Sub Area Commanders located in the State are invitee members. The RSB meets at least once a year, issues executive orders to ZSBs on implementation of policy formulated at the KSB and reviews progress on implementation. The ZSB consists of the Chairman, his Sub Divisional Officers and one or two ex-servicemen, generally, nominated by the Chief Minister.

Directorate General of Resettlement. The DGR is part of the MOD and, notionally, directly under the Minister of Defence or the Minister of State (if there is one) assigned the duty of looking after the welfare of ex-servicemen. In practice, the DGR works under the Additional Secretary who is responsible for KSB matters. At MOD level the DGR has sub-directorates of Resettlement, Training and Welfare. At the next lower level following the hierarchy of the Army, the DGR has deputed (Zonal Directorate) at Army Command Headquarters, Departments of Sainik Welfare at State Capitals and Zila Sainik Welfare Office Co-located with District Headquarters. These subordinate offices of the DGR provide 'Horizontal' linkages with the KSB organisational structure. Their effectiveness is dependent on personal relationship with State Ministers and their Secretaries and Deputy Commissioners since no institutionalised method exists.

Comments on the Organisational Structure

The KSB organisation which came into being after Independence is the successor of the Soldier, Sailor and Airman Board which was formed during 1917 to deal with the re-settlement and welfare problems that were likely to arise with the release from service of the personnel that were recruited to meet the expansion of the British Indian Army to meet the requirements of the First World War. It was an organisation which extended downwards to

the district level and had strong 'teeth', since India was centrally administered under the British Raj and the then Indian Army was a vital component of this Raj. With the proclamation and adoption of the Constitution of a federal republic the KSB became only a persuading body with no powers to get its policies implemented by States. Further, the status of the Defence Services changed as a natural consequence of the adoption of a Democratic Federal Constitution. However, the antipathy towards the Defence Services was such that this lowering of the status has been carried to levels whereby the legitimate dues to the Defence Services of a democratic nation are denied. This applies to serving as well as retired personnel of the Defence Services.

Besides this unfortunate manner in which the political establishment and the bureaucracy has been viewing the Defence Services, the personnel of these Services come from the states of the Union, serve the nation in organisations controlled by the Central Government and on retirement wish to go back to their States to settle down. The fundamental issue in the resolution of the problem of resettlement in which the country has made no headway over the past 50 years or so is that of obtaining whole hearted support from all the States of the Union. However, some States from which heavy recruitment has been taking place over the years and where soldiering and soldiers are traditionally respected, institutionalised methods of resettlement in the form of job reservations exist in State Public Sector Enterprises and other agencies which provide employment in the State. In a similar manner the Central Government has taken steps for the absorption of ex-servicemen in Central Public Sector Enterprises. Unfortunately the agencies that actually have to provide the necessary resettlement, seldom fulfil their obligations since there is no system for monitoring and enforcing the instructions of the GOI (MOD) through the KSB. The absorption of ex-servicemen into Central Public Sector Enterprises may also have been affected by their reluctance to serve outside their States of origin. The lack of information about what actually is happening on the ground makes streamlining of procedures to make best use of the available opportunities difficult. Other aspects of essential welfare like vacation of encroachment on land and premises, provision of medical care in areas where military

hospitals do not exist and financial help to the most needy is seldom provided by the KSB organisations at State and District levels on a preferential basis to ex-servicemen who during their service have been away from their homes and have not had the time or means to attend to their personal problems.

The DGR organisation is also not structured and adequately funded to be effective in present day conditions. It is too small and too subordinate to the bureaucratic establishment of the MOD. It does not have direct access to other ministries of the Central Government to monitor and ensure that agencies under them are fulfilling their commitments in regard to absorption of ex-servicemen. The Directorate General does not have any formal linkages with the 'Personnel' branches of Defence Service Headquarters which could serve to carry out perspective planning for re-settlement. Pre-retirement training and, above all, obtaining civilian recognition for service qualifications are aspects which are not getting the attention that they deserve. Outside New Delhi the DGR has no subordinate organisations co-located with Navy and Air Force Command Headquarters. These Headquarters are located at State capitals and DGR cells there would be very useful since the influence of the equivalents of Army Commanders with the State Governments is likely to be more effective than low level contacts. The funding for the DGR is done through the budgets of the Defence Services and naturally would be subject to a lower priority than other important areas of expenditure of the Defence Services. Spending of what little is available is also time consuming because of pre-audit procedures.

Thus, the existing system is ineffective because:-

- (a) The system with two vertical organisational structures with loose, non-institutionalised horizontal linkages is unable to meet the basic welfare of ex-servicemen, particularly re-settlement.
- (b) It has not catered and does not cater to the growing number of ex-servicemen and the multifarious and essential welfare requirements activities which are their due.

- (c) The response from States towards the welfare and re-settlement of ex-servicemen has, generally, been poor.
- (d) Funds available to the present organisations are inadequate.
- (e) It does not meet the bare needs, leave alone the aspirations, of ex-servicemen.

Re-structuring of Organisations and Methods

Legislation. In 1984, the Government appointed a "High level Committee on problems of Ex-servicemen with Mr K P Singh Deo, the then Minister of State in the MOD in charge of personnel matters of the Defence Services, as Chairman. The aim of this Committee (K P Singh Deo Committee, 1984), was almost the same as that of this USI Panel Discussion. Since many of the recommendations for improvement made by participants at the panel discussion appeared to be based on the recommendations of the K P Singh Deo committee, 1984, relevant extracts from it are placed at Annexure 1. In brief the legislative requirements are : the need for a National Ex-Servicemen Resettlement Act (the nomenclature should be Ex-Servicemen Welfare and Resettlement Act); similar Acts in States; a Parliamentary Committee to oversee the implementation of various schemes and facilities for ex-servicemen; the establishment of an Ex-Servicemen Commission on the lines of the Scheduled Castes and Scheduled Tribes Commission. Although the number of ex-servicemen in 1984 was only about 3,00,000, K P Singh Deo Committee considered re-settlement as the single, greatest problem of ex-servicemen and hence the legislation suggested by it, is biased towards solving their problem. Without adequate legislation the problems of ex-servicemen are never likely to be solved. If and when legislation in this regard is envisaged, it should include statutory safeguards for all aspects of the welfare of ex-servicemen and not only re-settlement. With the passing of this legislation, the KSB organisation would be replaced by the Ex-Servicemen Commission and the RSBs would be replaced by Cells of the Commission functioning at State capitals. The legislation must also make it mandatory for District Deputy Commissioners or Collectors to implement the directions of the Commission and its cells. The aim, concepts and functional details

should be clearly worked out in detail for incorporation while drafting the necessary legislation. With this legislation, the monitoring and overseeing bodies with adequate teeth would be in place. The next aspect to consider is the organisation that would be required to implement re-settlement through the various ministries of the GOI and the State Governments and to manage all aspects of Welfare.

The DGR Organisation. The DGR is a tri-service organisation which has proved to be rather ineffective because of the existing civilian bureaucratic control in the MOD. To become effective it has to be strengthened and function in the MOD independently of the civilian bureaucracy. The consensus opinion that emerged from the panel discussion was that it should become a full fledged 'Department of Ex-servicemen Affairs' with the Director General having the status and power of a Secretary to the GOI. This officer would be equivalent to an Army Commander and the Office would be held in rotation by officers from the three Defence Services. A Minister of State should be appointed in the MOD to look after this Department. This department should have subordinate organisations at State capitals with a status equal to Departments in the State Governments to interact on an equal footing with Secretaries of the State Government and agencies in the State who are involved in Ex-servicemen Affairs. They will also work closely with the State Cells of the Ex-servicemen Commission and Command Headquarters of the three Defence Services. In Delhi this Department should have Joint Secretaries (Defence Services Officers) for Resettlement, Training, Medical Care and Welfare. The personnel branches of the three Defence Services should create Ex-servicemen Cells to provide data and coordinate action in all aspects of Ex-servicemen Affairs with this Department. Only the outline of re-organisation have been stated. It would be necessary for a group of senior officers from all the three Defence Services to work out the details to institutionalise the linkages clearly at all levels and the funding of this Department.

The United States Model. In the United States of America, the welfare of ex-servicemen is considered so important that it is controlled by a 'Department of Veteran Affairs', the equivalent of a

ministry in India. A brief on this is placed at Annexure 2. The highlights of this organisation are:-

- (a) The ex-servicemen population is about 47,00,000.
- (b) It has an annual budget of about 35 billion US Dollars.
- (c) The appropriation from this budget are:-
 - (i) Compensation, Pension and Education Benefits— 51%
 - (ii) Medicare — 41%
 - (iii) Hospitals, National Cemetery and other construction activities — 2.3%
 - (iv) Administrative Expenses — 2.7%

The Department of Veteran Affairs is the second largest of the 14 cabinet departments and employs 2,74,000 persons constituting one of eight federal employees. 53 per cent of male employees are veterans and about 7000 of the female employees are veterans (ex-servicewomen). This department appears to disburse pensions and other benefits, provide medicare, run veterans hospitals and so on. Hence it is also able to provide employment to veterans. This model is not relevant to Indian conditions but has been shown to highlight the importance given to Veteran Affairs in the USA.

Resettlement

As mentioned earlier, re-settlement is the single, largest problem in the management of ex-servicemen and hence its ramifications are being considered separately and in some detail. Prior to 1962, the strength of the Army was a little over 2,00,000 and the vast majority of the soldiers were enlisted for 'Colour Service' of seven years and a liability in 'Reserve' for a further eight years. The effect of terms of engagement was that soldiers were released at the ages of 24 to 25. Resettlement at this age is much easier than at the ages of 35 to 40. The numbers that were released annually was much smaller than the current 50,000. Of those that were released, a sizable portion were from rural backgrounds and went back to agricultural occupation without seeking re-employ-

ment. There was a good demand for trained, reasonably educated and disciplined young men at the ages of 24 to 25 and those that sought re-employment were easily absorbed. The Army expanded from 2,00,000 to 8,50,000 during the years 1963 to 1967. The colour service increased to 15 years and later to 17 years. As a result of these changes the annual retirements from the Army increased to 50,000 to 60,000 from 1980 onwards. These retirees were in the age group of 35 to 40 and, comparatively, less absorbable. Thus, the re-settlement problem assumed alarming proportions.

At that time in many State and GOI Public Sector Enterprises, reservations of the order of 8 to 11 per cent of annual recruitment was available. Taking a mean of 10 per cent reservations, for full absorption of 50,000 ex-servicemen a total annual recruitment of 5,00,000 in the agencies concerned had to take place. Moreover, these agencies came into existence gradually from about the mid fifties and since terms of engagement for their employees was upto the age of 55 (later increased to 58), there were hardly any retirements. Annual recruitment, in all probability, was made only to meet casual wastages and minor expansion. Reservations, therefore, did not provide much scope for absorption of ex-servicemen. The result was that every year sizable backlogs were left and the cumulative effect has left a total of about 8,00,000 to 10,00,000 unemployed ex-servicemen (these figures are rough estimates since absorption figures are not available). Further, about 75 to 80 per cent of annual retirees from the Army are estimated to join this backlog.

From 1990 onwards, even, the not very meaningful, reservations for ex-servicemen disappeared overnight since the GOI introduced Caste based reservations and the Honorable Supreme Court has ruled that all reservations put together should not exceed 50 per cent of recruitment and this 50 per cent is now the exclusive preserve of Scheduled Castes, Scheduled Tribes and Other Backward Castes. It is reported that while discussing the need for reservations for ex-servicemen at a meeting of the KSB, the then Minister of Defence mentioned that ex-servicemen should apply for re-employment using the caste based reservations. Per-

haps, it did not occur to the Minister of Defence that he was destroying the basic, non-castiest and truly secular integration of the personnel of the Defence Services. It was mentioned by some participants of the panel discussion that the GOI should consider a Constitutional Amendment reducing the caste and tribe based reservations to 40 per cent and provide a 10 per cent reservation to ex-servicemen. None of the Castes and Tribes who enjoy the current reservations would suffer since the major portion of the personnel in the Army come from these castes and tribes. However, this alone would not solve the problem of re-settlement. Other measures like obtaining guaranteed absorption in Private Sector Enterprises through the good offices of the various Federations of Industries and Chambers of Commerce have to be taken in hand.

K P Singh Deo Committee, 1984, recommended the creation of "Ex-Servicemen Industrial Development Corporation" with annual financial commitments of Rs 25 crores each from the Centre and the States. This was to be a "Plan Outlay". The purpose of these was to provide financial help to ex-servicemen in establishing small scale enterprises wholly manned by ex-servicemen. This recommendation is yet to see the light of day in spite of the efforts of Mr K P Singh Deo whether in office or out, whether in the Parliament or not, to get the support of Finance Ministers year after year, all to no avail. It is sad to note that ex-servicemen cannot get even Rs 350 crores in a Five Year Plan outlay and a population of ex-servicemen of about 3,00,000. In the current context the Plan provisions for ex-servicemen has to be much more to be of material value.

Using civilian terms, PBOR retirees from the Defence Services are in the "Skilled" "Semi Skilled" and "Unskilled" categories. The marketability or absorption of these retirees depends on the skill category into which they fit. The Defence Services have not yet evolved a system by which the availability of personnel with 'in service' trade skills translated into equivalent civilian nomenclature are properly advertised. Most agencies where employment is available do not know that a wide variety of skills are possessed by retirees from the Defence Services. The matter of affiliation of our trade training institutions (PBOR) to civilian trade training institu-

tions and getting them qualifications acceptable in the civilian world has been under consideration for a long time without any worthwhile results. This aspect should be pursued with vigour by Defence Service Headquarters since it is a vital element in re-settlement. To cite one example, units do not ensure that their Motor Transport drivers obtain civilian driving licences when in service.

A large proportion of retirees from the Army do not possess marketable skills. They are acceptable only as Security Guards. Many ex-servicemen are employed as Security Guards by banks and other institutions. In the current environment of insecurity that prevails in urban centres, there is an increasing need for Security Guards. The Army and the DGR must evolve measures to take advantage of this growing need. The Government of Maharashtra has established a State Security Corporation exclusively manned by ex-servicemen. Other states should be approached to establish such corporations.

Several participants suggested the establishment of Construction Corporations of ex-servicemen. The pay off from this would be immense in terms of resettlement since the country is embarking on large scale infrastructure development. A good example of this type of organisation is the Indian Railway Construction Corporation (IRCON). A study of their organisation, methods of working and diversification into other areas not connected with construction would be very useful. Such corporations would only need 'such capital' which could be even in the form of bank loans. With proper management they would very rapidly become profit earning organisations. This profit could be used to raise more such corporations. This is an area of Topmost Priority for implementation by the DGR and the Defence Services. This concept does not require any material help from the Government. It only requires imagination and enterprise.

Medical Care

Even as late as 1984, Medical Care of ex-servicemen was not considered a major problem. K P Singh Deo committee makes only one recommendation on this subject; "It is recommended that existing facilities in Military Hospitals be enhanced for ex-service-

men and their entitled dependents in a phased manner in the next few years". This was one of the many unimplemented recommendations of the Committee. Now, in 1998 the problem has grown to immense proportions, firstly, because of the increase in the number of ex-servicemen and their entitled dependents; secondly, a good many ex-servicemen are over the age of 70 requiring greater and more frequent medical treatment, and, thirdly the medical establishment and hospital facilities have not been expanded commensurate with the increasing load of ex-servicemen. Unfortunately very few participants made any material contributions on this subject at the panel discussion. Although very few ideas were presented by the participants, the following points need attention:-

- (a) Creation of the post of Director of Medical Care in the DGR.
- (b) Establishment of Polyclinics in Military Stations in those areas where sizable ex-servicemen population exists, only for out patient treatment and providing laboratory facilities.
- (c) Increasing the bed capacity in all Military Hospitals.
- (d) Obtain guaranteed out and in patient treatment in Government hospitals in States.
- (e) Consider the concept of establishment of Ex-servicemen Hospitals on the lines of Veterans Hospitals in the USA, at small townships in areas where sizable populations of ex-servicemen exist.

Other Aspects of Welfare

During the panel discussion only the point regarding passing of legislation in States to enable ex-servicemen to get their houses vacated by tenants for self occupation after their retirement was mentioned. Such legislation exists in Maharashtra and Uttar Pradesh. The Central Government should take steps to get such legislation passed by other states.

The K P Singh Deo committee went into this in much greater detail. The recommendations of this committee include the following points:-

- (a) State Governments to take steps to bring in necessary changes in their Land Reforms Acts and Rules to protect land holdings of Defence Service Personnel while in service and exempt them from tenancy laws to enable them to get their land back on retirement.
- (b) Reservation of a definite percentage of surplus land for allotment to ex-servicemen.
- (c) Reservation of 10 per cent of housing plots.
- (d) Rent control legislation to be amended to provide for vacation of houses of ex-servicemen by tenants for self occupation.

Conclusion

The panel discussion was very lively and fruitful. These proceedings are based on the 'Approach Paper' sent by the Adjutant Generals Branch of Army Headquarters and 'Hand outs' prepared by the Panel. Recommendations are made in the paragraphs on each topic discussed. The material available in the K P Singh Deo Committee has been used. The recommendation of this Committee, suitably updated, could form the basis for future action. The most important recommendations of the USI Panel are:-

- (a) Need for legislation at Central and State Government levels to bring in a new system to replace the moribund KSB System.
- (b) Reorganisation of the DGR into a full fledged Department in the MOD.
- (c) Amendment of the Constitution to provide a 10 per cent reservation for ex-servicemen within the 50 per cent limit of reservation.
- (d) Establishment of Ex-servicemen Construction Corporations, with or without Government help.
- (e) Restructuring the Medical care of Ex-servicemen.
- (f) Legislation in States to provide for security and return of land and houses of ex-servicemen on retirement.

*Annexure 1***Relevant Extracts From the Recommendations of the High Level Committee on Problems of Ex-servicemen, 1984
(K P Singh Deo Committee)****Employment**

15.3. The Committee has noted with concern the poor utilisation of reserved vacancies in Central and State Government posts; Public Sector Undertakings and the organised sector. As this has been caused due to poor implementation of order on reservation, absence of roster system, small vacancy arisings periodically and inadequate monitoring, the Committee strongly recommends that a comprehensive National Ex-servicemen Resettlement Act be enacted to cover the organisations under the Government of India. A model Act in consultation with States may also be drafted and States requested to legislate on these lines for safeguarding the interests of ex-servicemen in their respective jurisdiction. (Para 5.43)

15.4. The Committee strongly recommends that a Parliamentary Committee consisting of Members from both the Houses be constituted to oversee the implementation of various schemes and facilities for ex-servicemen. This, in itself, is bound to ensure that existing reservations, schemes and facilities are better implemented than at present (Para 5.44).

15.5. Similar to the Scheduled Castes and Scheduled Tribes Commission, an Ex-servicemen Resettlement Commission (or Commissioner), be also established under the proposed Act. Such a Commission or Commissioner would be in a position to effectively monitor placement of ex-servicemen. (Para 5.45)

Self Employment

15.30. Ex-servicemen entrepreneurs are clearly in need of both financial and technical assistance. The lack of such assistance is the major factor deterring large numbers of ex-servicemen from joining the ranks of the self employed. The establishment of a National Ex-Servicemen Financial Corporation at the Centre, similar to those functioning in Punjab and Himachal Pradesh and being

set up in Maharashtra, is an urgent need. The details of this scheme are presented in Chapter X where a proposal for integrating ex-servicemen in the Seventh Five Year Plan, has been discussed at length, and financial allocations proposed (Para 8.21).

15.31. Utilising modern data processing methods, it would be possible to ascertain as much as three years in advance whether a serviceman, due to retire from service, wishes to involve himself in a self employment venture. Having done so, the proposed Corporation could ensure suitable training/additional training to help him start a venture during the last 18 months of his service. All other assistance needed can then be rendered by this Corporation soon after his retirement (Para 8.22).

15.32. There is also a need for statutory reservations both at the Central and State Government levels to help ex-servicemen in self employment schemes. Presently, in a number of States and UTs, even small shops are auctioned thus putting them beyond the reach of the average ex-serviceman. (Para 8.23).

15.33. The Armed Forces must encourage ex-servicemen to undertake small self employment projects in formation headquarters and units. There are a number of such activities in almost all formations and units, like wet canteens, tailor shops, shoe maker shops, cycle repair shops etc. There are a number of activities/institutions run by the Service in which the ex-servicemen could be assigned an increasing role to provide self-employment (Para 8.24).

15.34. At the Central/State Government levels, ex-servicemen may be accorded a preferential treatment in the fields of transportation of goods, supply of items and other such ventures. Such preferential treatment should be institutionalised by reserving a certain fixed percentage of available opportunities of ex-servicemen (Para 8.25).

15.35. At the Kendriya Sainik Board meeting held in 1983, the then Raksha Mantri had indicated that ex-servicemen should be encouraged to set up small ancillary units to manufacture and supply parts to Defence industries. Further, in the case of certain other items of supply to the Ministry of Defence, captive small scale

industries, established by ex-servicemen with assistance from the proposed Ex-servicemen Financial Corporation, could be given greater priority. In doing so, the Ministry of Defence would be setting an example in resettling ex-servicemen (Para 8.26)

Seventh Five Year Plan and Ex-Servicemen

15.44. The activities and areas for the benefit of ex-servicemen given in this chapter required plan outlay to the extent of Rs 170 crores at the Central Government level and Rs 180 crores at the State Government level. This proposed amount is also related to the ex-servicemen population in the country to the extent known. The break down of the total amount suggested is as under:-

		Centre	States
		(Rs. in Crores)	
(a)	Ex-servicemen Financial Corporations in various States	27	27
(b)	Ex-servicemen Industrial Development Corporation	25	25
(c)	Vocational Training	05	05
(d)	Welfare schemes/project, eg., hostel and medical facilities	29.5	29.5
(e)	Additional schooling facilities	5.5	16.5
(f)	Old Age Homes	11	11
(g)	Other Schemes	67	67
Total		170	180

15.45. The allocation of the above funds is to be spread over a period of five years of the Seventh Five Year Plan. The annual plan allocation for the proposed scheme amounts to about Rs 34 crores for the Centre and Rs 36 crores for the States. The States should be advised to make provisions from activities, 15 per cent may be provided in the first year, 25 per cent in the second and so on for subsequent years of the Plan. This amount is a very small percentage considering that Seventh Five Year Plan envisages an expenditure of Rs 3,20,000 crores. The above proposals for planned resettlement of ex-servicemen to be referred to the

Planning Commission for inclusion in the Seventh Five Year Plan (Para 10.19).

Welfare

15.54. State Governments may be requested to take steps for bringing necessary changes in their Land Reforms Act and Rules to protect the land holdings of Defence Personnel while in service and to exempt them from Tenancy Laws to enable them to get back their land when they retire from service. State Governments should, while assigning surplus land, reserve a definite percentage exclusively for ex-servicemen who would like to settle on land. The Central Government may issue necessary guidelines to all the State Governments.

15.55. The committee recommends that all the Housing Boards under State Governments and Union Territories may be requested to reserve a minimum of 10 per cent of the house sites/houses for the ex-servicemen (para 12.15).

15.56. The Committee also recommends that when the serving personnel come back to their places on retirement, the Rent Control legislation should provide for them getting back their houses on retirement for self occupation on a time bound basis and under summary procedures. If necessary, legislation may be undertaken by all the State Governments. The Committee further recommends that the Government should give all possible assistance and encouragement to housing organisations such as Army Welfare Housing Scheme and also instruct financial institutions to assist ex-servicemen to put up their own houses by sanctioning loans, if possible at concessional rates of interest. The Group Insurance Scheme for the Service may be directed to pay special attention to this aspect with a view to enable the ex-servicemen to own a house (Para 12.17).

15.59. It is recommended that existing facilities in military hospitals be enhanced for ex-servicemen and their entitled dependents in a phased manner in the next few years (Para 12.19).

15.60. States/Union Territories be addressed to extend free medical treatment to ex-servicemen in all their civil hospitals on the analogy of the system being followed in some States (Para 12.20).

*Annexure 2***THE AMERICAN MODEL**

The USA, with an ex-servicemen population of only about 47 lakhs has a separate Ministry in the Government to oversee the welfare of ex-servicemen. This department of Veteran Affairs (VA) has the following organisation for administration of various programmes:-

- (a) Veterans Health Administration (VHA).
- (b) Veterans Benefits Administration (VBA).
- (c) National Cemetery System (NCS)

During 1993, the budget for VA was 34.9 Billion USD and was sub-allotted as under:-

- (a) Compensation, Pension and education benefits – 51%
- (b) Medical Care – 44%
- (c) Hospitals, National Cemetery and others – 2.3%
- (d) Administrative Expenses – 2.7%

The Department of VA is the second largest of the 14 cabinet departments in the USA and employs 274 thousand employees constituting one out of every eight of the total federal Government employees. 53 per cent of the male employees are veterans and among women employees there are about 7,000 women veterans. Thus besides giving an effective assistance to the ex-servicemen, it also provides re-employment opportunities to the ex-servicemen in the department itself.

Re-employment of Ex-Servicemen

MAJ GEN JAGJIT SINGH (RETD)

Introduction

The Defence Services have a steep pyramid for promotion to higher ranks. In consequence, bulk of the rank and file have to proceed on pension establishment, while still in their mid-thirties. As to the Officers, over 60 percent are retired as Majors and Lieutenant Colonels. Here then is a body of men with a high standard of discipline and work ethos, physically fit and mentally alert, who are on the street, with school going children and a meagre pension.

Besides a remote back seat to which the Defence Forces have been gradually relegated in all respects since Independence, service conditions are often tough and hazardous, even during peace times, in present day India. The fact that they have to retire early, while still in the prime of life, is yet another factor that has made military service unattractive to the youth. No wonder that there is a shortage of over 9000 Officers and 24,000 men in the Army alone, thus adversely affecting the country's defence preparedness.

Defence preparedness, of course, covers a vast field. The scope of this paper, however, is confined to re-employment of ex-servicemen which, as mentioned above, has an important bearing on our defence preparedness. While many other issues connected with national security may, regrettably, continue to remain entangled in the politico-bureaucratic-economic web, at least a proposal, as placed below, should not be difficult to implement.

The fact of the matter is that, not only are the Armed Forces faced with a shortage of both officers and men, the quality of new entrants is also being gradually affected. Needless to add that the country cannot allow this to continue, since, at this rate, the Defence

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Services shall come to comprise of second grade officers and men, for which there may be too heavy a price to pay in the event of war. Inter-alia, the need to make the fighting services more attractive. One such measure is to ensure their resettlement on retirement.

The Proposal

I propose that we identify suitable projects, keeping in view the professional expertise of service officers and men. These should be run primarily by ex-servicemen. There is considerable technical talent available in our technical services, with a vast array of sophisticated hardware that they are trained to handle. Likewise, officers and men from the combat arms possess a high degree of management and leadership attributes. With their combined input, technical and managerial, it should thus be possible to successfully undertake a variety of projects on a commercial basis.

Possible Projects

These could broadly be classified as under :-

Army

- (a) Construction of roads, bridges, houses and allied engineering activities.
- (b) Telephone communications.
- (c) Road transport including repair and maintenance of vehicles.

Navy

- (a) Sea transport.
- (b) River transport.
- (c) Fish trawling.

Air Force

- (a) Air transport, including repair and maintenance of aircraft.
- (b) Air travel agencies.

Common to the Three Services

- (a) Adventure activities.
- (b) Security services.
- (c) Educational institutions.
- (d) Management and leadership training institutes and conduct of seminars.
- (e) Tourism.
- (f) Selected items of defence production.

Method

In case the proposal finds acceptance in principle, a start could be made as follows :

- (a) An inter-service expert committee identifies a few initial projects.
- (b) The Central Government creates a corpus fund for the above projects, with the Government of the State in which a project is located chipping in, to add to the central fund.
- (c) Public Limited companies are formed to run the said projects with shares floated for public participation, to help enhance the scope of activity.
- (d) Applications are invited from officers and men required for each project and those selected are earmarked, while still in service, and orientation course organised for them.
- (e) Once fully geared and equipped, the companies concerned enter the commercial world and start to compete with their civilian counterparts.

Terms and Conditions

Selected officers and men would continue to get the last pay drawn. Their further advancement, thereafter, would depend on the profit generated by their units.

In the event of war, these personnel may be called upon for such duties as their parent service headquarters may consider

them to be still fit. *Inter alia*, they would need to undergo refresher courses in their respective service trades and branches periodically.

Having joined a project, all concerned would be required to forego their pension claim, but would continue to receive the remaining facilities, as applicable to other ex-servicemen. As to their pension, this shall be the responsibility of the firm concerned, whether in the form of gratuity or pension etc, as is the practice prevailing in other civil firms. Denial of service pension would, *inter alia*, bring with it greater accountability and commitment. As such, these firms would be a class apart, as opposed to other Public Service Units.

Alternatively, the pension entitlement is merged with salary which is correspondingly reduced, till the servicemen concerned continue to serve in the company.

All ranks would continue to be subject to Military Law to ensure discipline and efficient functioning, uninterrupted by strikes, 'gheraos' and 'bundhs'.

Out of the profit generated, by respective firms, a fixed percentage is transferred to the Central and State Governments besides that due to the share holders, while retaining the balance for further growth.

Conclusion

The above is a broad concept, with the primary aim of making a career in the Defense Forces more attractive, and thus help them maintain a high professional standard, and *inter-alia* of defence preparedness. The secondary aim achieved, as the said firms proliferate and more and more surplus funds are generated by them, would be to provide a measure of help to the defence kitty and, in turn, provide a further boost to defence preparedness.

Needless to add that, the first such project shall require most careful planning and result oriented execution, headed by at least a Major General or equivalent, specially selected. Likewise the remaining staff, including essential professionals from the Civil shall need proper screening and selection. *Inter alia*, the first project shall

help provide both encouragement and experience in the formation of other such firms that follow.

The PLA are involved in the civil markets in China in a big way - in the manufacture and marketing of goods, in competition with national and multi-national companies. About 15,000 companies are said to be run by the Chinese military, meeting over one third of China's defence budget. That the PLA business empire is recently reported to have come under clouds for mismanagement, profiteering and money laundering (inevitable when an empire becomes too unwieldy, top heavy and money rich) is a separate matter. This apart, it is not the Chinese but an Indian model that this paper has endeavoured to project.

Pokhran II has, undoubtedly, injected renewed confidence and self-respect in Indians, both at home and abroad. At the same time, faced as we are with economic sanctions from the powerful rich, the Defence Services, with their tested dedication and work ethics can be an invaluable source to help boost our economy, in case their talents are harnessed in an organised manner.

An Army Industrial Training Institute, the first such ITI, has recently been set up at Ambala to train ex-servicemen for employment in business enterprises being run in the state of Haryana. Setting up of such Institutes is also said to be under active consideration of the State Governments of Andhra Pradesh and West Bengal. In due course, more states may follow the lead thus given. Let us then call these ITI's the 'launching pads' for the Ex-Servicemen public limited companies, as proposed above. Inter alia, officers, JCO's and other ranks shall have two avenues of employment viz., taking up jobs in enterprises run under civil managements, and those that shall fly the banner of the Indian Military.

To start with, the first such firm could undertake manufacture of selected items for the Armed Forces. Former militarymen would thus be engaged in meeting the needs of their brothers in uniform, to whatever limited extent it be.

Whereas many more ideas can be injected and various other facets which have not been thought of in this paper included, the broad concept, as outlined above merits consideration.

Letters to the Editor

Letters are invited on subjects which have been dealt with in the Journal, or which are of general interest to the Services.

I

Dear Sir,

The revolution in communications which would come with linking of the Armed Forces to the information superhighways could change our traditional organisational structure to some extent as brought out by Lt Col A Banerjee in his article "Information Superhighways and Repercussions on Command Style" (*USI Journal*, Oct-Dec'98). One does wonder, however, what repercussions the latest IT technology will have on the command style of unit commanders, particularly an Infantry Battalion commander. Agreed, he will have a plethora of Op, Int and Adm related inputs available to him at the press of a computer key. But will a computer printout provide him with real time information during operations that his well trained recce parties can? Despite tremendous progress made in IT technology of late, is there any software presently available which can tell the commander anything about the state of morale of his troops or give him a feel of the pulse of his command? A computer can display the enemy's strength and general dispositions but what about his state of leadership, determination and drive? Only one computer is capable of analysing all this, since it can reason and think - the human brain. As such, one does not visualise any perceptible change in the command style of our commanders. They will continue to take command decisions-at least in the foreseeable future-based on their rational thinking, personal experience and individual traits.

Lt Col Sunil S Parihar
SIKH LI

II

Sir,

I read with great interest and greater disappointment part II of *USI Journal* Jul-Sep 98 which deals with LIC (Low Intensity Conflict).

With great interest because between 1963 and 1971 I served as a middle piece officer (Lt Col/Col) in the insurgency affected areas of Nagaland, Mizoram and Manipur, holding field appointments and not as a Staff Officer. After retirement from service in 1973, I have settled down in Manipur and, therefore, I have had a close look at the insurgency – both as a soldier and a civilian for a span of nearly 35 years. With great disappointment because none of the distinguished writers have given a blueprint for solving this problem which has persisted in the North-East for nearly fifty years, except for making a bland statement that it should be solved politically. We all know that.

What then has the Army been doing here for the last fifty years? Surely the task of the Army has been to exert enough pressure on the insurgents to force them to come to the negotiating table. In this it has failed (ceasefires and suspension of operations have been announced by us and not by them), as is the common talk here and with which I agree. A little study of the problem will reveal that it is not the fault of the troops but of the Generals. The troops deployed in these inhospitable areas and frequently abused of human rights violation - wrongly and mischievously - and by not only the civilians but also local governments, have carried out their onerous duties with patience, tact, courage and dignity. Hundreds have been killed or maimed fighting for a "cause" which is strictly speaking no "cause" at all. Most of the insurgent organisations are to a great extent aided and abetted by political parties and sometimes by local political parties in power. Hence, are the troops not shedding their blood for a wrong "cause"?

Prolonged involvement in LIC has put great stress and strain on the junior officers and men and hence the increasing cases of suicides, shootings and general indiscipline as rightly pointed out by Maj Gen Samay Ram in his thought-provoking article. We are using wrong tools and wrong methods to tackle insurgency, to the eventual detriment of our troops and their morale.

In early eighties when Shri LP Singh, the then Governor of the North-East states visited the UK, he happened to meet Field Marshal Templer of Malaya fame. The conversation turned to insurgency

and Templer asked LP if he (LP) had supreme authority over all agencies operating in the region. When LP replied in the negative, Templer said, "Then you will have little success". (*Fools and Infantrymen* by Lt Gen EA Vas, page 256). So here is the answer from a man who crushed insurgency in 8 years; we are at it for the last fifty years. (Critics of this letter may say : Britain was dealing with her colonial people, we are dealing with our own people. My answer is : The basic factor common to both the countries is Insurgency). Be it noted that in the last fifty years insurgency in the North-East has not abated; it has become more intense and has spread from one State to four States! Besides, as that educated soldier Lt Gen S K Sinha points out in his article, loss of Assam will hurt our strategic and economic interests far more than the loss of Srinagar Valley. Are we prepared for that?

It is high time our Generals or Generals-turned-Governors took to plain speaking to their political masters and gave them frank and fearless professional advice.

Col M D Commissariat (Retd)

Review Article 1

Secure India, Secure Indians*

ADMIRAL J G NADKARNI, PVSM, AVSM, NM, VSM (RETD)**

A nation's physical security and the welfare of its people are inextricably intertwined. Of what benefit is an impregnable fortress built around half starving people? On the other hand, the welfare of the people can only be assured in a secure and placid environment. Yet this interdependence and the consequent interaction between the two elements of security has rarely been investigated or explored in detail by writers dealing with national security issues in India.

Defence and financial experts have tended to concentrate on parts of national or economic security rarely according macro level treatment to the entire subject of security. The results have been reminiscent of the blind men confronting the elephant. Now, probably for the first time, comes an erudite treatise on the issue of both national and human security. Verghese Koithara, in his book *Security for India and Indians*, steps back to look at the whole elephant and what he sees is not good.

During the first fifty years after independence, India has made considerable economic progress, says Koithara. Yet the country remains mired in the past, its grand goals as distant as ever, its myopic politicians unable to rise above petty squabbling and its people condemned to exploitation and poverty at the hands of a handful of elite. India's biggest failure has been in the field of human development. Better education, better health and improvement in the quality of life have eluded the population. We have been successful in overcoming language and regional differences. On the religious front, the picture is not so comforting. Rather than cementing Hindu-Muslim relations, recent events have made them worse.

***Society, State and Security : The Indian Experience.** By Vice Admiral Verghese Koithara (New Delhi : Sage Publications), forthcoming.

**Admiral JG Nadkarni is the former Chief of the Naval Staff.

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The archaic national security organisation, which has seen little modernisation during the last fifty years, hinders India's defence forces who muddle their way from crisis to crisis. Koithara's book takes a dispassionate view of India's past and dares to look into the future. Koithara dissects both India's achievements and failures with the clinical precision of a pathologist. He is critical without being corrosive; dispassionate, not destructive, impartial but not cynical.

Koithara brings impeccable credentials to his labour of love. A logistics specialist in the Indian Navy, Verghese Koithara reached the rank of Vice Admiral and was the Navy's Controller of Logistics for four years. Along the way he had two valuable stints with the Defence Planning Staff, giving him a rare opportunity to observe and interact with decision-makers and policy shapers. He was both educated and appalled by what he saw. Even at the very top, decisions were hampered by system disabilities and a dysfunctional organisation. National security decisions appeared to be taken without factoring in the human security angle. Koithara's book is the result of his experience and his keen power of observation during those years.

Koithara's book is not an exercise in public relations. He neither asks for nor gives a quarter. His job is to take apart the layers of myth and hypocrisy, which cloud security issues and expose them to the intense glare of the spotlight. He backs his conclusions with exhaustive research. The eventual result is not only an authoritative but also a highly readable book on India's security problems and the interrelationship between security and human development.

Koithara devotes nearly a third of his book to taking stock of the first fifty years of Indian independence. His canvas is wide and his coverage comprehensive. He details both India's achievements and her failures in human and economic development, her progress in science and technology and her successes and failures in handling external relations. In a telling chapter he compares India's progress in five decades with that of China and Indonesia, who started about the same time. Predictably, India comes off third best in every aspect of human development. Whether it is per capita

income or eradication of illiteracy, India lags far behind the others. The UNDP annual report ranks India a lowly 138th out of 175 countries listed in the field of human development. Even Bangladesh, once considered a basket case, has overtaken India.

Readers, however, should be more concerned with the rest of the book, which deals with the present and the future. Koithara details the vast changes which have taken place in the world since the end of the Second World War. In every sphere, economic, political and technological, there has been a major transformation. The world has become more interactive. The 21st Century will be an era of global free trade and co-operative security assisted by an explosive progress in communication.

According to Koithara, there have been monumental changes in both the concept and conduct of warfare. Information Technology (IT), now pervades every aspect of warfare and will play a major part in this transformation termed the RMA (Revolution in Military Affairs). The Gulf War highlighted the manipulation of public opinion through the clever use of the media.

With the end of the Cold War, world military spending is now two-thirds of its 1987 peak; arms exports have come down to about \$ 40 billion in a decade from a high of \$ 75 billion in 1987 and the defence industry employment in major arms exporting countries has reduced by 50 per cent. Both the use of nuclear weapons and the use of force are now seen to be abnormalities. The public, mostly in developed countries, is far less tolerant of casualties of war.

In matters of national security India's record is equally unimpressive, says Koithara. India's transition from a colonial arrangement to a democracy required an overhauling of its defence apparatus. Lord Ismay, advisor to the Viceroy, was asked to suggest a transitional arrangement. Based on his advice a Higher Defence Organisation was set up, which, with minor amendments, all for the worse, remains in force to this day. Through inertia, or possibly as a result of vested interests, what was meant to be temporary, has grown roots that are deeply entrenched – to the

dismay of the Armed Forces, to the advantage of the bureaucracy and the apathy of the politicians. Unfortunately, various factors have combined to deny the country an effective and responsive decision making apparatus for the conduct of the nation's security. An opportunity to overhaul the entire system after the 1962 disaster was squandered away in accusations, breast beating and finding scapegoats.

Koithara concedes that a major restructuring of not only the Indian Armed Forces but the entire war waging organisation is necessary. The problems are myriad. Bloated manpower and burgeoning maintenance costs are eating into the defence budget leaving little money for anything else. Modernisation of the Army remains a distant dream. India's Defence Services, fourth largest in the world, have little voice in defence policy making. Service Chiefs are being rendered more powerless by the day. The recently announced and long awaited National Security Council is a bureaucrat controlled non-starter. A recalcitrant and entrenched bureaucracy has become powerful but unaccountable, prepared to hang on to power at all costs. At the political level, leaders are either unable or unwilling to change things.

Koithara advocates the much needed reform in the financial management of the Defence sector. It is a matter of shame that even thirty years after the rest of the developed world introduced it, India does not have a proper cost accounting system within its defence forces. It is impossible to predict how much should be spent on defence without knowing whether it is spent cost effectively. Each Service, vying with others to get the largest share of the defence pie, stubbornly resists the introduction of the Planning, Programme and Budgetary System (PPBS).

The Defence Research and Development Organisation has proved to be a big disappointment, says the book. With the possible exception of the *Agni* and *Prithvi* missiles (and that too with considerable help from the ISRO) their only success has been in the field of public relations. The MBT 80 that finally arrived in the form of *Arjun* in the late Nineties is, according to the men in the field, a dud, although the seniors guardedly praise it and have

placed orders for "limited production". The Navy's *Trishul* missile, promised by 1992, is still undergoing "successful trials" in 1998, the ships under construction have been awaiting their arrival for six years. The organisation is wallowing in narcissism and self congratulations.

India's problems do not only relate to organisational structures, says Koithara. What is even more important is a change in the 'culture', which would enable us to function more effectively, to bring in true jointmanship, to appreciate dissent, to accept criticism and finally to learn from our past mistakes; in brief, a successful reorganisation.

Having taken stock of the situation, Koithara proceeds to devote the rest of the book to evolving a strategy for the future. According to him if India is to conquer the security challenges in the next century, greater stress has to be laid on human security, in the fields of education, health, nutrition and family planning. It is equally important to involve the entire population in the nation building exercise.

The guns versus butter controversy does not interest Koithara. We should rise above such worthless debates, he says; there is a marked place for every aspect only if we plan accordingly. Koithara, however, is optimistic about the future of India. Given a resolute leadership, pragmatic policies and unwavering will, any goal is attainable.

Koithara brings a masterly and incisive insight into every component of India's defence machinery, borne of experience of working within the organisation. To say that Koithara's book is a 'must read' for every budding politician, committed bureaucrat and ambitious Serviceman is to state the obvious. His book is a major addition to the handful of books which may shape the destiny of this nation in the coming years.

Review Article 2

Third Millennium Equipoise

COLONEL RAHUL K BHONSLE

The dawn of a new millennium heralds hope despite multitudinous travails faced by mankind. The self-perpetuating thanato of ecological decay imposed by human greed and the sudden catastrophe of a nuclear holocaust are two diametric extremes of doom facing man today. Ironically, these deluges occur just as mankind is on the greatest threshold of cognitive knowledge bordering on wisdom. Major General Vinod Saighal has attempted to analyse this paradox and has suggested a structural paradigm for achieving the elusive Utopia of internationalisation of state. A peace revolution enabling global governance and nuclear disarmament is thus the focus of Saighal's treatise for ushering in the "Age of Humanism".

Set out in three parts, in Part I, appropriately entitled "The Quest", the author draws upon the philosophical wealth of Mahabharata, and the peace epistles by Gandhi and Tagore, to establish the esoteric logic of disarmament. Dilution of sovereignty, fast track negotiation and implementation of treaties, checking self proselytising proclivities of the military industrial complex and control on nuclear stockpiles are some of the broad areas determined for achieving the goal of global harmonisation. While the instruments identified for change are global, "satyagrahas" by intellectuals and youth are hyperlinked by information technology, creation of international institutions as the World Nuclear Council (WNC), Global Planetary Council and Global Information Depository and "Lincolnesque" leadership by the USA.

In Part II, discrete steps to achieve global governance and nuclear disarmament spanning half a century are portrayed. For international governance, Saighal's main agenda is democratisation of the United Nations, spelt out in four stages going on to 2050, with gradual devolution of powers of the permanent members of

Third Millennium Equipoise. By Major General Vinod Saighal (New Delhi : Lancer Publishers & Distributors, 1998), pp. 238, Rs. 395.00. ISBN : 1-897829-48-5.

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the Security Council in the initial stages. The path towards zero nuclear weapons includes measures as freeze on nuclear stockpiles, banning research in nuclear weapons refinement, dilution of state of nuclear readiness, proscription of attacks by nuclear weapon states on non nuclear weapon states and so on, which are generally well known. The specific steps to achieve these measures is however Saighal's unique contribution, which comprises of protocols, panels, accords and monitoring agencies under the nodal aegis of the WNC – again in four stages upto 2050.

In Part III, Saighal explores some of the future challenges as nuclear terrorism and ecological degradation. Global referenda as a means for democratising representation, motivating conventional weapons disarmament by taxation on weapons production, mothballing existing equipment, establishing cordon sanitaire for UN peacekeeping, are some of the key suggestions for maintaining peace and harmony in the coming years. Ecological revival of the planet is the final issue covered. The Epilogue however will qualify as his, "piece dé resistance". In it, Saighal's passionate call for the dawn of age of reason and humanism, elaborated by a demonstration of the baser aggressive and competitive instincts of mankind, drawing on behavior patterns from day to day life, is an appeal from the heart which can move the devil.

Some profound changes in recent months, such as the unification of currencies in Europe, vindicate the author's hope for emergence of a global order in the years ahead. However, these will not be sufficient to erode the bellicose instincts of man exemplified by the Darwinian theory of, "survival of the fittest". While Saighal's theme cannot be faulted, lack of factoring in frailties of the human psyche, the sloth of pedagogues for activism, moral bankruptcy of political leadership the World over and the gestation period before institutions with a universal canvas can function effectively, mar his postulates. Thus a lack of the psycho-social, human and organisational perspective of resistance to change of fossilised values and structures would remain the principal weakness of the book. Some of the measures suggested by the author as confiscating of ships and aircraft, voluntary deposits into the Global Reconstruction Fund and enlarged role for the International Court of Justice, are also impracticable.

Actualising implementation of theory on such a complex issue as global disarmament necessitates a clear perception of the possible. Saighal's structured-mechanistic approach does not denote a deep-rooted understanding of the same. His style too is repetitive and lacks focus. However, his unique perspective of Weltanschauung, with its emotive appeal for reason and peace, should be a spiritual-philosophical contribution to the agenda for international peace and unitary human statehood.

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Short Reviews of Recent Books

A Quest for Excellence-Training the Indian Army. *Army Training Command, Shimla*
(New Delhi : Thomson Press, 1998), pp. 203.

The Army Training Command in Shimla has fulfilled a long felt need for an understanding by the ordinary citizen of India of what the Indian Army does when it is not at war; which, of course, by the grace of God, is only inflicted on us occasionally. It has brought out what is an excellent publication by any standards.

It sets out in essential detail the organisation and scope of training in the Indian Army in eminently readable style, and with some very informative illustrations; in fact, some of the pictures in the Volume are absolutely superb - collector's pieces. There is a wealth of information on the type of training conducted for recruits and officer cadets, as also on the type of training conducted by the plethora of Indian Army institutions to cope with the conflict scenario that could be faced today, or in the new millennium. It gives an insight into the structure of the Indian Army by giving details of various regimental and corps training centres with their locations, the types of officer intake into the various academies, and a peep into the location, role, charter, and organisation of various courses run at many of the premier institutions of the Indian Army.

The publication also takes the reader through a couple of tri-Service institutions like the National Defence Academy, the Defence Services Staff College and the College of Defence Management. Particularly significant is the insight into the operational training aspects of the Indian Army, and the focus on technical and simulator training.

A Quest for Excellence - Training the Indian Army is, in my opinion, invaluable as a reference book on the training in the Indian Army, in all academic institutions in our country, including university libraries, (I dare say, in all colleges and schools), institutes dealing with defence research, corporate houses who feel they have a stake in the security aspects of our country, and diplomatic missions based in India. I would commend this publication without any reservation.

Lieutenant General Satish Nambiar (Retd)

Perspectives on Security : National and International. *Ed by Rajendra Prasad*
(New Delhi : Radha Publications, 1998), pp. 189, Rs. 350.00, ISBN 81-7487-143-8.

This book is a collection of 16 essays on different aspects of national and international security by scholars from the academic community and by Armed Forces officers. The essays introduce the reader to the complexities of national security in a lucid and forthright manner.

Lt Gen S K Sinha's article is an excellent exposition of threats to national security from internal dangers while Maj Gen D Banerjee introduces the reader to emerging trends in the evolution of a new world order and looks at the concept of Huntington's "Clash of Civilizations" from an Indian perspective. He argues convincingly that the world is moving increasingly towards "multi-polarity". Mehrotra's essay focusses on the dangers of rising ethnicity in multi-ethnic states and argues that the drawing of new boundaries based on ethnicity would have a profound destabilising effect on the world order.

There are two essays on Indo-Bhutanese relations which focus on problems of the Nepalese ethnic community in Bhutan. The essay on Gorkhaland movement draws attention to its implications on Indo-Nepal relations and its fall out in Sikkim and North-East India. The essays highlight the fact that India's geographical location, size and historical background prevent its escape from getting drawn into controversies, of even bilateral nature, in South Asia.

The essays on terrorism and the nuclear question by Rajendra Prasad are of international concern. Rajendra Prasad argues that unless the international community evolves a consensus on the definition of terrorism and accepts the criteria that "one man's terrorist is every man's terrorist", the fight against international terrorism may not be won. On the nuclear question, the author argues in favour of placing nuclear weapons under United Nations' control pending total disarmament. In the present milieu there is no hope of its acceptance but the idea is eminently worthy of debate.

This book will be of immense value to defence officers preparing for promotion and professional examinations and for students and teachers of defence studies in our universities.

Brigadier S P Sinha

Strategic Compulsions of Nuclear India. By Col Ravi Nanda (New Delhi : Lancers Books, 1998), pp. 333, Rs. 495.00, ISBN 81-7095-069-4.

A timely book on the interesting and important subject of what India should do after the nuclear tests of May 1998. Almost one-third of the book is devoted to appendices, the statement made in the Lok Sabha post-tests, and the Defence Ministry's report to the Parliament (1998). Written in a simple, understandable style, it explains the problems confronting India post-Pokhran-II. Whereas the political parties have tried to use the event as a scoring point, there is no doubt that the public needs to be educated on India's need for a "deterrent".

The author presses for the creation of Chief of Defence Staff (CDS) post and restructuring of the Ministry of Defence. He suggests the deputy CDS as Defence Secretary, and treads on thin ice, when he comments on, say, Burmese affairs. The main argument I have is that he appears to have been unduly influenced by American doctrines. He suggests an arsenal of 450 nuclear "warheads" - deliverable by ICBMs and nuclear submarines – and a cost estimate of 10,000 crores for a period of fifteen years – a colossal expenditure,

which would in no way be covered by the reduction in manpower from 1.3 to 9 million. Having declared "no first use" policy, we do not need so many nuclear 'warheads'.

I recommend this book as a valuable addition to all defence libraries.

Major General Partap Narain (Retd)

Subedar to Field Marshal. By *Major General Partap Narain (Retd)* (New Delhi : Manas Publications, 1999), pp. 323, Rs. 695.00, ISBN 81-7049-072-3.

Much has been written about the politics and policies of Indianisation of the officers of the Indian Army. For the first time we have authentic and detailed accounts of the Indians who encroached into this exclusive British group. Partap Narain was one of these early officers : he gives his own story dispassionately and narrates many other stories without rancour or unbalanced comment.

The author has described how a handful of defence (Army) officers soldiered on through Kashmir war, Menon politics, and the changing ethos of our governmental system as it developed from a colonial base to the present democratic set up, where military threats are matched by threats from insurgency, corruption and lack of support to national defence from a society more interested in personal gains. His comments and suggestions for the future add to the many existing thoughts on these problems that have so far defied solution.

This is a timely book; with a focus on – sometimes positive sometimes negative – interplay between politicians, administrators and soldiers. Above all, it gives a vivid picture of how Indians performed in wars as equals to the best of British, and how a mere handful handled their responsibility, in the post-independence era, to give us a truly National Army. Well worth reading.

Tindi

Freedom Trauma Continuities : Northern India and Independence. By *DA Low and Howard Brasted* (New Delhi : Sage Publications, 1998), pp 237, Rs. 350.00, ISBN 81-7036-679-8 (India-HB).

Destined to face changed relationships – from amity to animosity - well beyond the control of the people themselves, the book portrays their feelings while leaving their ancestral homes, friends and neighbours on partition. Amazing how each community finally settled down in India, in their new environment. In Pakistan, the Punjabis were accepted while others were pushed down to Sindh and till date have not been accepted by the locals. Though the call for partition was officially given by the Muslim League on 23 March 1940 (now celebrated as Pakistan National Day), one is surprised to read that GD Birla, one of the eminent members of the business community, considered partition of India on religious grounds as imminent, as early as 1920. A later study carried out by Dr John Mathai and Sir Homi Mody, in May 1947, had stated that if partition did take place, Pakistan would be an economic desert.

The book details the uprisings from the 1930 civil disobedience movement, till partition and its aftermath. It is estimated that 5.5 million Hindus and Sikhs crossed over from West Pakistan to India and 5.8 million Muslims left for Pakistan. The land and other immovable property left behind by the Muslims was much less than those left behind by those who left West Pakistan. The state of affairs in East Pakistan were no better - the Bengalis took more time to settle down.

Having read the essays one wonders if the British could have avoided these abhorrent massacres on partition or was it intentional - the 'last ace in the pack' to teach the Indians a lesson? Churchill had once remarked that within 50 years of British leaving India, the subcontinent will begin to disintegrate.

The book is an amalgam of critical and sympathetic analyses of a grave tragedy, the remembrance of which should make one consider the backlash of such momentous follies - sometimes destined to occur.

Brigadier Y P Dev (Retd)

Psychological Strategy for Alternative Human Development: India's Performance Since Independence. By Prayag Mehta (New Delhi : Sage Publications, 1998), pp. 252, Rs. 375.00, ISBN 81-7036-711-5.

There have been endless debates amongst economists and social scientists on how the developed world has become rich and prosperous and the reasons why developing world continues to remain poor. It is true that there were substantial transfers from the underdeveloped countries to the developed countries through the iniquitous world economic order spawned by colonialism. However while development in technology and infrastructure has helped, it is better utilisation of human resources which has made most contribution. Development essentially is a human problem. It is in this area that India has signally failed, and despite surfeit of five year plans, it figures in the list of 40 countries at the bottom of the internationally accepted well-being ladder. This is a damning indictment of the ruling political and bureaucratic class. All that the nation has had, as the author puts it, is an 'epidemic of irrelevant statistics' and development of underdevelopment.

The author points out that the job has been performed poorly because a colonial based administration, lacking qualifications, commitment and integrity, was charged with the task of poverty alleviation and social reform. The author's analysis is by and large sound. However, while talking of empowerment of the oppressed as an alternative strategy for development, he has merely dwelt on enactments of instruments and organs of the state, policy axioms and management postulates. He has made no suggestion on how a congealed social order can be redeemed. In the stratified social structure, the disadvantaged feel that they will remain unseen and unheard unless they resort to violence and in reality, is the only empowerment that they have.

Air Marshal K D Chadha (Retd)

Curbing Illicit Trafficking in Small Arms and Sensitive Technologies : An Action-Oriented Agenda. Ed by Péricles Gasparini Alves and Daiana Belinda Cipollone (Geneva : United Nations Institute for Disarmament Research, 1998), pp.260, ISBN 92-9045-127-0.

This book published by the United Nations contains articles by various authors including one by Air Commodore Jasjit Singh, the director of Institute for Defence Studies and Analyses, New Delhi on the subject of illicit trafficking in small arms, sensitive technologies, drugs, chemical agents etc. Illicit trafficking in any form is a worldwide phenomenon. All this by and large is linked with terrorist activities, guerrilla warfare, organised crime as well as low intensity conflicts. To eliminate the possession of small arms and trafficking of such weapons is an arduous task especially when international borders are easily negotiable. All the authors have discussed in detail these important issues and how best to curb the menace of trafficking. Some of these important issues, which have been discussed are:-

Firstly, inter-relationship between small arms trafficking and terrorism : The author comments that the manufacturers and traders are encouraged by the fact that threat of punishment is merely regarded as an additional cost. The result is the increase in the price, less quantity traded. Also the arms produced are inferior to those available in the legal market. Secondly, national and international initiatives against illicit arms trafficking : Quite rightly all states should act at the international level to harmonise the laws and concentrate on collaboration and cooperation.

A well researched book of interest to those involved in curbing illicit trafficking and terrorism.

Commodore R P Khanna (Retd)

Looking Sideways : The Specifics of South-South Co-operation. Ed by Jorge Heine, Greg Mills, Ian Porter with Antoinette Handley (Johannesburg : The South African Institute of International Affairs, 1998), pp.145, ISBN 1-874890-83-8.

In an era of globalisation and liberalisation, countries desire joint ventures. The South African Institute of International Affairs considered it prudent to organise a conference to discuss the areas in which the countries of the Southern region could gainfully co-operate; the main ones being :-

- Mining : South Africa and Australia are highly developed in this field. In Gambia, mining plays a critical role in the economy. These countries could co-operate by way of pooling of resources in management, research and development.
- Maritime co-operation: As 70 per cent of the earth's surface comprises of the oceans, there is a growing realisation of the importance of the sea. Maritime co-operation could be in trade, exploration of mineral

wealth, fishing, maritime environment, sea lanes of communication and search and rescue. This co-operation could be strengthened by goodwill visits, joint naval exercises and exchange of officers on courses.

- **Fishing** : Different types of fish are abundant in the south western ocean and, as such, there is a need for co-operation for efficient management of stocks and marketing.

Also discussed at the conference were such issues as illegal drug trafficking, light weapon proliferation, and the need for the international community to find solutions to these problems.

The book concludes with an important subject, "Government and Diplomatic Co-operation in the Southern Hemisphere". The need for the United Nations to play an important role in the expanding South-South Co-operation cannot be over emphasised.

An informative book, of interest to the policy makers of developing and underdeveloped countries.

Commodore R P Khanna (Retd)

Science and Dissent in Post-Mao China : The Politics of Knowledge. By H Lyman Miller (Seattle : University of Washington Press, 1996), pp. 370, \$18.95, ISBN 0-295-97532-6.

In states with authoritarian regimes, dissent and deviation are rare exceptions. However, Deng's era in China in the 1980s witnessed a severe wave of dissent from the scientific community and social scientists. That political opposition was voiced against a regime which attached the highest priority to science and technology did appear strange to some. But then, terms like socialism with Chinese characteristics, socialistic modernisation and socialist spiritual civilisation had different connotations for the establishment and the dissenters. The controversy ranged from the dominant position assigned to Marxism-Leninism not only on ideology, but to all fields of knowledge, including quantum theory, relativity, fundamental particles et al. The debate was not only on the inherently pluralistic structure of modern science but also on the deeper issues of authority relating to freedom of speech, assembly and press and it was this ferment which led to the Tiananmen Square upheaval. The dissenters were branded as 'spiritually polluted' and sponsors of 'bourgeois' liberalisation. The fact that the dissenters were themselves members of the Communist Party was of no consequence to the critics.

Whether political liberalism will be an enduring phenomenon in the post - Deng period, only time will tell. The author concludes that so long as the Communist regime, for technical advancement, remains dependent on the scientific profession, scientist-dissidence will persist. According to one Chinese

academic : "Without dissent there is no science and without science there are no dissenters." It does appear that dialectics and polemics on dissent will be intrinsic to the Chinese polity during its phase of transition.

A remarkable book not only about science and dissent in China but also on the political history of the country.

Air Marshal K D Chadha (Retd)

The Practice of Power : U. S. Relations With China Since 1949. By Rosemary Foot (Oxford: Clarendon Press, 1997), pp. 291, ISBN 0-19-829292-9.

As the paranoia of a strategically proselytising Sino-US nexus, traditionally hostile towards India, spreads across the intelligentsia in the country, this book with its central hypothesis of establishing the basis of US-China relations on global strategic balance rather than short term economic expediency should be of great interest. The timing of the book is also ominous. It comes in the wake of a general review of foreign policy of these nations towards the subcontinent, prompted by the Shakti-Chagai tests in May-June 1998 and President Bill Clinton's visit to the People's Republic of China (PRC) immediately thereafter. The range of conditions that led to a perceptible shift in American policy towards China – from hostility to rapprochement and normalisation to camaraderie – is also a fascinating subject to students and practitioners of international relations alike. For it weaves the story of fusion of not only two cultures but also two systems as different as there can be in human polity, in modern or ancient times.

This erudite work by Rosemary Foot, a Fellow of the British Academy and a renowned East Asia specialist, is a rigorous study of the enigmatic Sino-US relations over the years. Its scholastic credentials have been acknowledged with the award of Outstanding Academic Book of 1996. The author has lucidly analysed the multi-dimensional facets of international politics, trade, domestic policies, public opinion, Sino-Soviet relations and China's military and nuclear potential as these affected the see-saw of diplomacy between China and the USA. Some of the significant issues highlighted by the author include ruthless pursuit of power by the Chinese leadership since 1949 to restore the Chinese people to their rightful place in history, initially through an alliance with the Soviet Union and from 1979 onwards through a perceptive switch in economic policy towards the USA; American use of trade as a lever in bilateral relations since 1950's and the political rather than military thrust of the Chinese nuclear programme. A comparison of Indian and Chinese economic models in the 1950's carried out in Chapter Eight should be instructive of the manner in which the envisaged potential of the Indian economy was surpassed by the Chinese, ruled by the iron hand of a central leadership, deftly steering the country from the abyss of communism to the commanding heights of a market economy.

The book underlines the need for pursuit of a flexible policy by nations based on national interests, aimed at economic betterment of its people and

discarding anachronistic ideological baggage when required. The flux in international politics today has perhaps made the author reluctant to crystal gaze into the future except predicting continued engagement due to growing trade interdependence. Prognostications of the impact on Sino-American relations of the socio-cultural and political changes in China that can be foreseen in the years ahead, as the open economic policy demolishes rigid social and political structures, arousing latent democratic aspirations of the people and growth of the crescent of Islam on the Chinese rim, would have made interesting reading. Despite this minor shortcoming, the book is an invaluable contribution to a field of contemporary interest in international relations – the emerging Sino-US axis – and should be of considerable interest to our strategic community.

Colonel Rahul K Bhonsle

South Africa and Security Building in the Indian Ocean Rim. By Greg Mills (Johannesburg : The South African Institute of International Affairs, 1998), pp. 87, ISBN 1-874890-80-3.

The States of the Indian Ocean Rim form a collection of some of the most diverse sub regions of the world bordered by four continents represented by great cultures and religions. The Indian Ocean Rim has great economic potential, not only for the States within the area, but also for the broader international community. The Indian Ocean acts as a highway for the region and has a strategic influence over a wide area. It carries a large percentage of the global maritime trade, is used as a conduit for East-West shipping and is rich in natural resources. The potentials of Indian Ocean can only be realised if the IOR states actively work together in creating and maintaining a secure and stable environment within which multilateral trade can flourish. Dr Mill's study is an excellent summation of IOR issues, especially those that impact on security in the region. The study provides a number of policy guidelines for assessing likely success of various IOR initiatives, and for addressing regional security difficulties.

Brigadier RPS Malhan

The Third International After Lenin. By Leon Trotsky (New York : Pathfinder, 1996), pp. 380, £16.95, ISBN 0-87318-826-1.

The communist revolution of 1917 in Russia saw the system envisaged by Karl Marx coming into existence for the first time in the world. The revolution led by Lenin culminated in the workers and peasants forcefully overthrowing the feudal regime of the Czar and the government of the communist party was established. A programme for spreading communist ideals all over the world to replicate the Soviet revolution in other countries was launched under the organisation called the Communist International.

With the death of Lenin in 1924, there ensued a protracted struggle for

leadership in which the main contestants were Joseph Stalin and Leon Trotsky. Stalin who captured power in the party as well as the government, was out to suppress all traces of dissent. Trotsky had to flee the country to USA.

The Stalin-Trotsky confrontation was on ideological plane too, which surfaced in the Third Communist International in 1928. While Trotsky upheld the Marxist-Leninist ideal of need, concentrating on the work for international socialist revolution, Stalin limited the need to build socialism in the Soviet Union only and wanted the communist parties of other countries to work for defending the regime in the USSR. The book under review is Trotsky's defence of his contention. He clearly exposes the dictatorial tendencies of Stalin and the perversion of Marxist ideology in Russia.

Trotsky's exposition became prophetic when Stalin suppressed all dissent in the Communist Party of the Soviet Union (CPSU) and liquidated anyone whom he suspected of deviation. He turned a megalomaniac, and the dictatorial regime he established was continued by his followers who mostly ruled with the help of secret services like the KGB. It was only after Khrushchev's exposure of Stalin's atrocities, that the Russian people and the world woke up to the stark realities.

Trotsky's defence of the proletarian cause has now special significance to those who are interested in the history of the rise and fall of the Soviet Union. It also proves that dictatorships, howsoever good they be in the beginning, soon degenerate into oppressive regimes.

Subedar Major N Kunju (Retd)

The Roundtable Talks and the Breakdown of Communism. *Ed by Jon Elster (Chicago : The University of Chicago Press, 1996), pp. 247, £39.95, ISBN 0-226-20628-9.*

Eastern Europe underwent a unique transition from solidly entrenched communist regimes to democratic and open socio-political systems during 1989-90. Poland, German Democratic Republic, Bulgaria, Czechoslovakia and Hungary, each took recourse to roundtable talks between the powerful communist rulers and the reformist opposition, essentially bargaining for limited let-up from tight state-control to a diluted socialist political structure. The end results, however, were unexpected gains for democracy and a free and open society - whether in the structure of Parliament or Senate, the Presidency and its powers or a categoric transition to open society.

Dedicated studies of the preceding decade-long ferment in each of these five nations, the see-saw course of negotiations and bargaining by the two main protagonists and some side-liners, the leadership across the board and diverse socio-political strategies are projected by respective analysts and compiled in this book.

This compiled work makes a major contribution to the history of communism and its rise and disintegration in Europe.

Major General S K Talwar (Retd)

Deadly Imbalances : Tripolarity and Hitler's Strategy of World Conquest. By Randall L Schweller (New York : Columbia University Press, 1998), pp. 267, \$21.50 (pb), ISBN 0-231-11073-1.

Two decades after the War to end all wars, the world plunged into another World War in 1939 with Nazi Germany and Japan. The logic and prime stimulus for the history of the Second World War and its preceding decade are old records now. Randolph Schweller reviews these to project some fresh interpretations.

He contends that the great powers who ostensibly played for "Balance of Power" in a multipolar environment were in fact playing for "balance of interests" in their responses to developments on the continental chessboards. For Britain—and later France—maintaining a status quo philosophy was acceptable. This strengthened Hitler's aspirations and personal ambitions of 'race' and 'space' for the great German people. He also argues that, essentially, tripolarity devolving on USA, Russia and Germany, was the base-line wherein other powers were drawn-in. He draws on the systemic collation of capabilities of the great powers individually and alliance-wise, to show how these conform to a tripolar structure. It points out distancing, status quo and band-wagoning as behaviour patterns by lesser 'great' powers. His clinical comments on the concept of balance of power in international politics is thought-provoking.

The book will provoke interest and debate on interpretation of history.

Major General S K Talwar (Retd)

The Second World War. By John Keegan (London : Pimlico, 1989), pp. 514, £14.00, ISBN 0-7126-7348-2.

The Second World War is the most widely documented war in human history. In the purely military sphere, the Second World War was a culmination of the industrial warfare paradigm; and its wide panorama of participants, nations and means, makes it a unique human conflict which due to its gargantuan size and human losses is unlikely to be replicated ever hereafter.

Recounting the myriad vestiges of the turbulent days of the War is John Keegan, a noted British military historian whose *The Face of Battle* and *A History of Warfare* is a well-received classic. Military history's narrative styles vary from the thematic to the chronological. Keegan has adopted an unique design of geographical dissection of the war theatres into the West, the East and the Pacific, and then chronologically dividing the events in these theatres into two distinct periods, 1941-43 and 1943-45, to narrate his story of the War

in six parts. Each of these parts is covered under four main themes of strategic analysis, centering on the leader with the initiative during the period, followed by an outline account of the conflict, with an enlarged view of a selected battle most distinctly signifying the dominant form of war in that period and finally ending with what the author calls the themes of war or primary sustaining factors – be it logistics or guerrilla war.

This typical treatment of the subject undoubtedly makes a fascinating read engaging the reader through lucid narration of the main events and personalities shaping the Second World War, many of them larger than life icons of their times–Hitler, Stalin, Churchill and Roosevelt. In focussing on the principal events and actors and analysing the contributory causes for the changes in their war fortunes such as emergence of blitzkrieg, growth of air power and significance of supplies across the Atlantic in the initial years and the use of super weapons in the final stages, leading to Japan's capitulation in September 1945, the author has provided an incisive insight into the main contributors of success in what finally comes out as a politico-military history of the war. To the serious military savant, however, who is in need of a deeper insight into the campaigns, the lack of sufficient detail in this book may prove frustrating due to limitations of in depth analysis, which is restricted to areas of selective focus by the author. But for the average armchair strategist, it would be an interesting introductory rumination into the vast panorama of the Second World War through the eyes of a perceptive observer and a compulsive storyteller as Keegan.

Colonel Rahul K Bhonsle

Gentlemen in Blue 600 Squadron : The History of No. 600 (City of London) Squadron Royal Auxiliary Air Force and No. 600 (City of London) Squadron Association 1925-1995. By Hans Onderwater (London : Leo Cooper, 1997), pp. 474, £25.00, ISBN 0-85052-575-6.

A comprehensive and well-researched history of the famous No 600 (City of London) Squadron of the Royal Auxiliary Air Force written by Hans Onderwater who has taken a keen interest in the affairs of the Royal Air Force since the Second World War, when the Germans occupied his country and No 600 Squadron was the first British squadron to rush to the aid of Dutch people on 10 May 1940.

No 600 Royal Auxiliary Air Force Squadron, formed in 1925, took active part in the 'Battle of Britain' in August-September 1940. Subsequently, it moved for operations to Africa and then to the Italian front. The Squadron was disbanded in 1957, after 32 years of service, due to cuts in defence budget. However, No 600 Squadron Association, formed in 1953 continues to foster the comradeship of those who served in this Squadron. In 1995, the Association commissioned Hans Onderwater to write the history of No 600 (City of London) Squadron. The research for the book is based on squadron Operational Record Books (1927-1957) and individual Combat Reports. During the war a large number of decorations (George Cross-1, DSO-2, DFC-45, DFM-9, MBE-3) were awarded

to the members of the Squadron who flew some of the famous combat aircraft of the WW II like Bristol Blenheim, Bristol Beaufighter, De Havilland Mosquito, Supermarine Spitfire, and Gloster Meteor.

Detailed and accurate accounts of aerial combat taken from the Squadron War Diaries are very interesting to read and provide a clear picture of the operational life of the Gentlemen in Blue.

Air Commodore N B Singh (Retd)

Ancient Civilizations of the New World. *By Richard E W Adams (Boulder Colorado : Westview Press, 1997), pp.158, £10.50(pb), ISBN 0-8133-1383-X.*

Most of us have a nodding acquaintance with the four Old World Civilisations – the Chinese, the Middle East, the Indus and the Nile valley. This book gives the most revealing and concise introduction to the ancient civilisations in Central and South Americas.

The central American region called the Mesoamerica including Guatemala, Mexico and Belize nurtured the Olmec, Maya, and Aztec cults. The Andes in South America based on Peru and Ecuador, gave rise to the Inca-Civilisations.

Under the Maya ancient system – by 250 B. C; Tikal a town in Guatemala, had a very large temple. It had a moat and a parapet system, about 25 km in length. The east and the west approaches were protected by swamps; the north and south were covered by defensive lines. By A.D. 250, they had several big cities. Teotihuacan, a city in Mexico, increased from 2,000 in 200 BC to 60,000 in 100 AD and to 125,000; making it the sixth largest city in the world, at that time.

In the Andes, with the advantage of the Humboldt Current on the Pacific, sea food was plentiful. It encouraged a migration from the North to the South. The first campers arrived in 1100 BC. The Inca Civilisation, in the Andes mountains in the central Highlands around the town of Cuzco, developed as a small community for 250 years, till in AD 1338, they were attacked. The old king with his heir fled; but his brother not only saved Cuzco, he went on to conquer a vast part of the Andes. A very highly sophisticated society grew up till it was overtaken by the Spaniards in 1535.

An interesting and well written short treatise for general education.

Major General Partap Narain (Retd)

The Indus Saga and the Making of Pakistan. *By Aitzaz Ahsan (Karachi: Oxford University Press, 1996), pp. 413, Rs (Pak) 425.00, ISBN 0-19-577693-3.*

An expert in constitutional law, the author is an advocate in the Supreme Court of Pakistan and a member of the Senate of Pakistan. He had held office, both as a provincial and federal minister. He has defended numerous political prisoners, including Benazir Bhutto, and, in turn, has himself served several

prison terms for his political beliefs in various jails. Multan, Sahiwal, Faisalabad and Mianwali - and thereby began his journey to discover Pakistan, which has been variously postulated as 'an historical aberration, the result of a split electoral mandate, the result of a divide and rule policy, or the product of one man's intransigence...is Pakistan indeed as fragile as we have all been told? Will it survive? Is it a natural state? Had India indeed been as inviolable and immutable as its exponents always asserted? Will Pakistan and its people revert one day to India?'

Lawrence Ziring in his book '*Pakistan: The Enigma of Political Development*' (1980) had observed, "...the fact remains that Pakistan's frontiers are for the most part crisis prone, its neighbours largely bellicose, and the fear persists that foreign machinations aim at exploiting the country's inherent weakness...Pakistan could cease to exist in its sovereign nation state form." Tariq Ali raised the same question in his book '*Can Pakistan Survive? The Death of a State*' (1983). Shahid Javed Burki in '*Pakistan, A Nation in the Making*' (1986) iterated "what lies in Pakistan's future? The important point about this question then is not that it has been answered is so many different ways, but that it is asked at all." Tahir Amin in '*Ethno-National Movements of Pakistan : Domestic and International Factors*' (1988) reports "the Bangladesh syndrome continues to haunt the Pakistani decision makers, who fear that the ethno-national movements in the other provinces, the North West Frontier Province, Sindh and Baluchistan, may also follow the precedent set by the Bangladesh movement."

These questions were already in the air and in other minds too but the author had obtained no solace from contemporary Pakistani analysts and their writings, and hence this book. Drawing on legend, folklore and ritual, he endeavours to establish the separateness of the Indus region from India, and presents a history of the political culture of the Indus region, now Pakistan, from ancient times to the present day and etches the identity of the Indus person, as the modern-day Pakistani. He reviews the current 'fragility syndrome' which 'is so widespread indeed that every day political leaders and activists issue warnings that their opponents, elected ministers, distinguished Governors, even the Prime Minister and the President, are parties to a conspiracy to break up the country. Each alleges the other to be a security risk. They catalogue the alleged betrayals of flag and country. In no other country perhaps would politicians even contemplate trading such weird and grotesque allegations among themselves. But this affliction is peculiarly Pakistani and haunts the analyst and the political scientist, the political leader and the administrator.'

Part I of this book, titled 'The Two Regions', examines the divide between the Indus region and India, more or less along geographical lines. Part II, 'The Two Worlds', investigates the differences between the Indus person and the Indian, and the most recent foreign rulers, the British. Part III, 'The Two Nations', describes the ostensible divide between the Muslims and Hindus of the subcontinent. Is the Pakistani an Arab? Or an Indian? Or something of both? Or neither? Are his origins entirely Central Asian? What influences has he

imbibed from Persia? The author, however, has a point to make: he thus posits, "is the Indo-Pak divide not of primordial origin?" In the ultimate analysis this proposition is not proved, when one bears in mind the proto-history of the subcontinent, and is very much a case, in military parlance, of situating the appreciation. An undoubtedly good read, and a well produced and erudite book.

Lieutenant General S L Menezes (Retd)

The Homeland of Aryans. By Surender Mohan Gupta (New Delhi : The Sarvadeshik Arya Pratinidhi Sabha, 1998), pp 208, Rs. 100.00.

The author, a member of the International Aryan League has attempted to revive the "back to the Vedas" ethos. Historically speaking, as the author postulates, the theory of Aryan invasion as recorded by pioneering indologists during British colonial rule is biased, partisan and "Christian centric". The Aryan invasion - theory has alienated the people of South and North-East from the Indian mainstream as the author concludes. He elaborates on the writings of Dayanand Saraswati (founder of Arya Samaj), Aurobindo and others, besides referring to contemporary archaeology and remote sensing data to prove that Aryans were the original inhabitants of India. The author traces the common links of Vedas, the epics like Mahabharata, pre-Indus Valley civilisation, the influence of Takshashila University system and vedic theory of evolution of human colonisation.

It is unfortunate that learned Indian historians have fault lines along divergent political leanings as the book brings out. This book, written in an interesting manner, makes sweeping judgements at places and the sketches and photographs are of a poor standard. This is one field which would require much more scholarly analysis through our academia and universities.

World religions authority Huston Smith recalls that in the 1950s the eminent British historian Arnold Toynbee predicted that in the 21st Century "India the conquered would conquer her conquerors." "He did not mean by that we would become Hindus", said Smith in an interview in the San Diego Union-Tribune (April 7, 1990). "What he meant was that basic Indian might would find their way into our Western culture, and, because of the metaphysical and psychological profundity, our way of thinking in the West would be influenced by Indian thought just as Indian technology has been influenced by ours."

It is hoped that we continue to maintain our ancient civilisational traditions, irrespective of the movement of the Aryans into or out of India - that is one big challenge the scholars need to address.

Colonel P K Gautam

Lise Meitner: A Life in Physics. By Ruth Lewin Sime (Berkeley : University of California Press, 1996), pp. 526, \$34.95, ISBN 0-520-08906-5.

This voluminous book is not every one's cup of tea. This famous woman has an element—Meitnerium – named after her. The life of this extraordinary lady is described from the time she arrived in Berlin 1907. She was admitted as a student, under the famous Max Plank. Here she met another person of high intellect—Otto Hahn. The two worked together through the Great War—Hahn went soldiering, she tried nursing. She rose in status; she was made a professor in the Kaiser Wilhelm Institute where she established an independent section for Physics. Her first recognition came as early as 1919 – when Hahn was awarded a medal, and she was given a copy! In 1935 when Hahn was the director of the KWI, Meitner along with Strassman carried out extensive experiments. By March 1936 they submitted their first paper 'Discovery of Nuclear Fission'.

Meitner being partly Jewish, had to leave Germany. She escaped to Sweden in 1939, where she worked for twenty years. She and Otto Frisch, a young Austrian physicist based at Copenhagen, in the Institute of Theoretical Physics led by Niels Bohr not only recognised that the Hahn-Strassman results – the barium in Hahn's solution—was correct; they also found a theoretical explanation for it. And they named all this "nuclear fission". She was named the "Woman of the Year" in 1946. In the year 1966, she was presented the U.S. Atomic Energy Commission's Enrico Fermi award.

A book for general knowledge. Interestingly the 92 elements of my days has expanded to 111 in the "Periodic Table" of 1995.

Maj Gen Partap Narain (Retd)

Would-be Worlds: How Simulation is Changing the Frontiers of Science. By John L Casti (New York : John Wiley & Sons Inc, 1997), pp. 242, \$24.95, ISBN 0-471-12308-0.

Simulating situations is a familiar technique of applying theories and verifying projections. The 'bits and bytes' of the century's boldest tool, the Computer, allows researchers to fashion realistic silicon surrogates of real world models that in the flesh would be too costly, uncontrollable, or even unmanageable. The science of simulation is explained and illustrated, in a masterly, logical, jargon-free text. It is easy to see why John Casti is one of the best science writers of the 1990's. Reading through the book is an exotic journey for the mind.

I once heard a senior field commander say, "Give me real-time intelligence and I shall give you the battle." It is not easy. The computer literate finds that the chore of putting together all the data elements representing the individual agents and their rules of action and interaction as well as coding the environment in which the agents interact is mostly a very tricky and time consuming task. Yet it is critical to test the structure and the robustness of the models as the large parameter

spaces, and non-linear interactions characteristic of these models, make understanding the behaviour via the standard statistical methods difficult. What can we learn about the real world of natural and human affairs through the medium of these electronic surrogates? Researchers making robust simulation systems need to adequately address computer science issues—data handling, user interfaces, software engineering and programme makers. Given these, the sky is the limit.

Each of the five, rather long chapters of the book, ends with a list of sources the interested reader may pursue. A first-rate read for the novice and the interested.

Colonel Balwant S Sandhu

Eclipse! : The What, Where, When, Why, and How Guide to Watching Solar and Lunar Eclipses. By Phillip S. Harrington (New York : John Wiley & Sons, 1997), p. 280, \$ 14.95, ISBN 0-471-12795-7.

Solar and Lunar eclipses are captivating celestial events and millions of Indians now watch these without superstitious fear, albeit with duly publicised precautions for viewing them safely. *Eclipse* by Philip Harrington is an interesting book which can turn a lay eclipse watcher into a budding professional. The book is structured very logically into eight chapters that take the reader from the very elementary to the comprehensive details of both the solar and the lunar eclipses. The book begins with a brief history and description of eclipses followed by equipments required for viewing the same. Detailed step by step explanations of the solar and lunar eclipses, photography and planning, and detailed diary of all eclipses till the year 2017 are the hallmark of this book. Extensive charts and diagrams are the other additives utilised to interest the reader and render this technical subject in the realm of understanding for the layman. The appendices are also comprehensive in that they give details of equipment suppliers, eclipse tour companies, eclipse bulletins and bibliography.

The book is a must read even for the eclipse watcher so that he can then comprehend and fully enjoy these awe-inspiring events.

Captain S Kulshrestha

Additions to the USI Library for the quarter-ending March 1999

(The books reviewed in October-December 1998 issue have been added to the Library during this quarter but not shown in this list.)

S.No.	Author's Name	Title	Year
Army-India			
1.	Kundu, Apurba	Militarism in India : The Army and Civil Society in Consensus, <i>New Delhi : Viva Books Private Limited</i> pp. 228, Rs. 695.00 <i>ISBN 81-76949-024-5</i>	1998
Autobiography			
2.	Ribeiro Julio	Bullet for Bullet : My Life as a Police Officer, <i>New Delhi : Viking</i> pp. 397, Rs. 395.00 <i>ISBN 0-670-87871-5</i>	1998
Bangladesh-Military Politics			
3.	Kabir, Bhulan Md Monoar	Politics of Military Rule and the Dilemmas of Democratization in Bangladesh, <i>New Delhi : South Asia Publishers</i> , pp. 275, Rs. 400.00 <i>ISBN 817003-218-0</i>	1998
China – International Politics			
4.	Qurong, Shen & Sengupta, Bhabani	China Looks at the World, <i>New Delhi : Konark Publishing Pvt Ltd</i> , pp. 270, Rs. 300.00 <i>ISBN 81-220-0538-1</i>	1999
Conflict Resolution			
5.	Rotfeld, Daniel Adam & Janusz Symonides	Peace, Security and Conflict Prevention : SIPRI - UNESCO Hand Book, <i>Oxford : Oxford University Press</i> pp. 230, £. 17.99 <i>ISBN 0-19-829435-2</i>	1998

Economy - Asia

6. Frank, Gunder Andre *Reorient : Global Economy in the Asian Age, New Delhi : Vistaar Publications, pp. 416, Rs. 495.00 ISBN 81-7036-760-3.*

Defence - East Asia

7. Moller, Bjorn *Security, Arms Control and Defence Restructuring in East Asia, Aldershot : Ashgate Publishing Limited, pp. 286, £ 42.50 ISBN 1-84014-006-2.*

Defence - Nuclear India

8. Roy, Sekhar Basu (ed) *New Approach (Atomic India Edition, 1998), Calcutta : S. B. Roy, pp. 204, Rs. 400.00.*

Foreign Policy - India

9. Dixit, J N *Across Borders : Fifty Years of India's Foreign Policy, New Delhi : Picus Books, pp. 453, Rs. 450.00 ISBN 81-87285-02-8.*

History - War Leadership

10. Bond, Brian *The Pursuit of Victory : From Napoleon to Saddam Hussein, New Delhi : Oxford University Press pp. 240, Rs. 700.00 ISBN 0-19-820735-2*

INA - Autobiography

11. Dhillon, Gurbaksh Singh (Col) *From My Bones : Memoirs of Col. Gurbaksh Singh Dhillon of the Indian National Army (Including 1945 Red Ford Trial), New Delhi : Aryan Books International, pp. 598, Rs. 950.00 ISBN 81-7305-148-8*

India Defence - Autobiography

12. Pradhan, RD *Debacle to Revival : Y B Chavan as Defence Minister, 1962-1965, New Delhi : Orient Longman, pp. 316, Rs. 350.00 ISBN 81-250-1477-2*

Intelligence

13. Singh, Joginder Inside CBI, 1999
New Delhi: Chandrika Publications, pp. 277, Rs. 395.00
ISBN 81-87431-00-8

Islam Culture

14. Taher, Mohamed Islam and the Western World: 1998
 Encyclopaedic Survey of Islamic
 Culture Series, *New Delhi: Anmol Publications Pvt. Ltd, pp. 278, Rs. 550.00*
ISBN 81-7488-944-2

Kashmir

15. Sharma, K Suresh Kashmir and the World : Kashmir 1999
 Sharma, Usha Through the Ages - 4,
New Delhi: Deep & Deep Publishing Pvt. Ltd., pp. 443, Rs. 900.00
ISBN 81-7629-090-4

Leadership

16. DuBrin, J Andrew Leadership : Research Findings, 1998
 Practice, and Skills,
Chennai : All India Publishers & Distributors, pp. 389, Rs. 790.00
ISBN 81-85502-48-X

North-East India

17. Raghavan, V R National Security Management 1998
 (Lt Gen) (ed) (Proceedings of a Seminar Organised
 by Delhi Policy Group), *New Delhi : Delhi Policy Group, pp. 55, Rs. 100.00*
ISBN 81-87206-00-4

18. Das, Gurudas Liberalization and India's 1998
 Purkayastha, R K (eds) North-East, *New Delhi: Commonwealth Publishers, pp. 306, Rs. 575.00*
ISBN 81-7169-498-5

Ocean Politics

19. Soares, Mario The Ocean Our Future: The Report 1998
 of the Independent World Commission
 on the Oceans, *pp. 247, £14.95*
ISBN 0-521-64465-8

Pakistan Politics

20. Bahadur, Kalim Democracy in Pakistan: 1998
 Crises and Conflicts,
*New Delhi: Har-Anand Publication
 Pvt. Ltd., pp. 335, Rs. 495.00
 ISBN 81-2410083-7*

Rajiv Gandhi Assassination

21. Sharma, Rajeev Beyond the Tigers: 1998
 Tracking Rajiv Gandhi's Assassination,
*New Delhi : Kaveri Books,
 pp. 278, Rs. 395.00
 ISBN 81-7479-030-6*

Tibetan History

22. Kadian, Rajesh Tibet, India and China: 1999
 Critical Choices, Uncertain Future,
*New Delhi : Vision Books,
 pp. 232, Rs. 325.00
 ISBN 81-7094-332-9*

WMD - Indian Security

23. Chopra, V D Double Talk on Weapons of Mass 1998
 Destruction and Indian Security,
*New Delhi: Gyan Publishers House,
 pp. 219, Rs. 350.00
 ISBN 81-212-0616-2*

World Development Report

24. World Development Report: 1999
 Knowledge for Development 1998/99,
*New Delhi, Oxford University Press,
 pp. 251, Rs. 385.00
 ISBN 0-19-521118-9*

Yearbook

25. Baranwal, Jayant SP's Military Yearbook 1998-99, 1998
 29 Edn., *New Delhi : Guide Publications,
 pp. 392, Rs. 1525.00
 ISBN 0076-8782*

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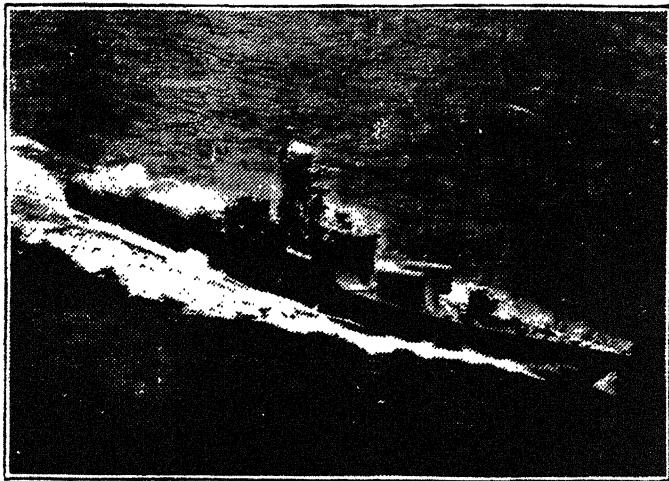
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