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PRINCIPAL CONTENTS

- A Glimpse of the Threat Perception - *General V N Sharma
and Security Environment of India PVSM, AVSM (Retd)*
- China's Security Policy for the Nineties - *Vice Adm S Mookerjee PVSM, AVSM (Retd)*
- The Military Quest for Excellence - *Brig N B Grant, AVSM (Retd)*
- Swords and Shields: Technology, Strategy and Ethics - *Prof M Zuberi*
- Indo-Pak Relations -- A Review - *Major Satish Chandran*
- The Gulf War -- The Last Hundred Hours - *Brig R D Law (Retd)*

JULY-SEPTEMBER 1991

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NOTE

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EDITORIAL

Reflections on the Russian Revolution

“The fear of capitalism”, say Will and Ariel Durant in their book, *The Lessons of History*, “has compelled socialism to widen freedom, and the fear of socialism has compelled capitalism to increase equality. East is West and West is East, and soon the twain will meet”.*

The recent revolutionary events in the Soviet Union, culminating in the ‘Coup’ in Moscow and its failure, dramatically demonstrate the distinct movement towards democratic freedom, as predicted by Durants, in a country, which, only till yesterday, was the great bastion of scientific socialism based on Leninist - Marxist theories.

At present, it is difficult to distinguish shadow from substance, in the tremendous struggle now underway in the Soviet Union, which, however, is, perhaps, the beginning, and not the end of the Soviet experiment in democracy. The situation is hazy, as of now, and likely to remain in a flux for sometime, because of the continuing desperate conflict of discordent elements. As we search for the heart of the problem the esoteric aspects escape our comprehension.

The complex character of the events unfolding in the Soviet Union needs deep reflection with a rigor of objectivity to arrive at its ramifications on the Indian Security paradigm.

After the diffusion of the power of the Soviet Union and its withdrawal from global rivalry, a new international system is under creation. The age of superpowers, rivals in military might and political influence, during the last four decades, has ended. In that bipolar world there was a strategic balance; a condition of armed stability, which no longer exists. Now, in the Third World, national security policies would need to master the finer nuances of the emerging international system and call for the ability to relate disparate elements into a useful pattern.

In this changing security ambience, it is necessary for the political and military leadership in India, to avoid ambiguity and insouciance and show visionary statesmanship, which only could bring about a radical transformation in our political and security ethos. The highly analytical lead article in this issue, by the former Chief of the Army Staff, General VN Sharma, makes us acutely aware of the unharmonious nature of the congenital insecurity engendered by counter-balancing asymmetries during the past 44 years of our independence.

* Will and Ariel Durant, *The Lessons of History* (New York: Simon and Schuster, 1968) p. 67.

A Glimpse of The Threat Perception and Security Environment of India

GENERAL VN SHARMA, PVSM, AVSM (RETD)*

The Indian Sub-continent, has always been considered a land of nature's bounty and resources. Various invaders have sought out the vast green alluvial Indo-Gangetic plains throughout history and raided or usurped the wealth of Indian monarchies and kingships who had amassed great fortune from internal and external trade coupled with sharp intelligence. India's diverse peoples have absorbed many of the invading tribes who became part of this land of plenty. Our people comprise varied castes, creeds and tribes with a single cultural heritage and historical ethos; divisive but united. We have much internal violence but a single goal; violence caused more by an exploding population, poverty, frustration, and base, self-seeking politics with poor statesmanship, than ethnic or religious differences.

It is of interest that throughout history, the drive by powerful states for foreign trade, both for resources and markets for manufactures, have been the mainstay of great nations; their military power has grown with trade growth and military muscle has been freely used to retain trading rights which led to wealth and power. Today, major undeveloped and untapped resources lie in third world nations and their contiguous oceans and seas, and these countries also provide the markets for cheap, effective, and high technology manufacturers which a developed country can competitively provide.

The type and quality of threats faced by present day India have now taken more subtle and dangerous forms encompassing military, covert intelligence, terrorist, economic and social spheres. The external threat is progressively being supported by internal destabilisation. India has fought four major military conflicts since independence in 1947 and has successfully defended our borders. Future wars are likely to be coordinated with internal political unrest and dissension to pose serious difficulty in retention of the present basic political parameters. Unless we set our house in order the future is bleak. We have been fully warned by the example of the Soviet Union.

* The author was Chief of the Army Staff, Indian Army during 1988-1990. The article is a text of a talk given by him to Defcom Study Circle on September 28, 1991.

DIMENSIONS OF THE EXTERNAL THREAT

MILITARY THREAT

The main military threat to India continues to be from Pakistan and China across our northwest, north and northeast land borders. With the formation of Pakistan, independent India inherited a vast plains territory land border which offers little obstacle to military advance and manoeuvre and also provides, in Pakistan, a substantial main base area for convenient proximity support for conduct of military and intelligence operations.

In comparison, the high altitude terrain and passes existing in the Ladakh, Sikkim and Arunachal Pradesh regions of our northern borders, pose logistical problems for modern armies. The Tibetan plateau region is unable to provide an effective logistics main base to China due to its high altitude sparse territories with poor communications. The logistics main base must thus remain in mainland China from where long lines of communication, travel difficult terrain to reach the border regions astride the main Himalayan mountain ranges. Further, the Tibet Autonomous Region remains largely hostile to Chinese occupation thus causing some proportion of Chinese military effort to be diverted to internal security duties.

China continues to improve communications and their control over Tibet and has much larger military forces for utilisation, as compared to Pakistan or India. However, we must give greater priority to the Pakistan military threat in view of the speed of possible military operations across the plains border between Pakistan and India, as also the comparative ease of military logistical back up and supply for major land and air force utilization.

THE CHINESE THREAT

The Chinese threat cannot be discounted despite improving foreign and cultural relations with India, in view of vast Chinese military capability and nuclear asymmetry vis-a-vis India. The northern India-China border is non-existent, disputed and undemarcated, with large Chinese territorial claims on our side of the line of control. In Ladakh's Aksai Chin region the Chinese have almost completely taken over their claimed territory; but vast tracts claimed by them across the Arunachal Pradesh border (MacMahon Line), upto the Brahmaputra plains, are in our firm occupation. A conventional military adventure against India would take some months to prepare and execute giving adequate time for our own response.

India now has strong defences and some advantage from the high altitude weather and physical constraints on troops and logistical systems. The Chinese would find a war more likely of success if some northeast Indian ethnic groups and states were to desire secession from the Indian Union or create ethnic strife, thus causing greater vulnerability to the shorter Indian logistical supply lines and divergence of our military power. The maintenance of military equilibrium requires continued Indian efforts in modernization and provision of adequate force levels in this region, separate to military force requirements on the western borders with Pakistan. India cannot match Chinese military force levels which are the largest in the world. But with the assistance of terrain constraints our present force level availability is considered adequate for defence in conventional war.

China is also making trade and military arrangements with some of our neighbours such as Bangladesh and Burma, providing access to the Bay of Bengal for Chinese sea trade and naval power. Inherent neighbourhood rivalries with India could support covert and overt economic, military and intelligence operations against us in coordination with Chinese capability. Our foreign policy must continue to be based on improvement of relations with China and settlement of border issues politically, as also on friendly relations with neighbouring states. The need for conventional and nuclear force balance and reduction is paramount.

In the northern border lie the seeds of future conflict, including use of Chinese tactical nuclear weapons to give them the required military advantage to 'break into' our defence lines, blunt any counter offensive by us and destroy our communication bottlenecks. This gives them the confidence to discuss issues from a position of strength. Secessionist, insurgent and terrorist movements in our north eastern states further weaken our stance. It should be a sobering thought to all Indians that a breaking away of Indian north eastern states would provide many advantages to all our bordering countries.

In sum, the Chinese threat is presently dormant but has great potential for future enlargement in co-ordinated military, economic, social and political spheres. Today, the stability of mainland China's internal situation is also somewhat suspect, with the iron Communist party hand running the country; but the fall of the Soviet Communist party and lessening of the Chinese perception of Soviet threat, indicates a move to more determined Government Control over the Chinese peoples and the latent democracy movement. They have the advantage of discipline, a single language and culture, with large economic resources progressively being developed for a better life for their people. A 'human' communism is visible

as the Chinese leadership learn quick lessons from the communist debacle in the Soviet Union. With such strength looming on our North we need to look sharp and hard at our own internal weaknesses and ensure our vital interests are not undermined. How this is to be done in the present climate of economic distress and political instability, is a matter for careful evaluation in open debate. If military risks are to be taken as in 1962, the public must be fully aware. Our future course should include a continuation of a strong defensive posture with the hand of friendship extended for mutual cooperation in economic well-being and mutual force reduction.

THREAT FROM PAKISTAN

Pakistan's is a love - hate relationship with India, fired by envy, revenge and fear of losing the economic race to prove the logic of its creation. Pakistan is not capable of subduing India by military means. Pakistan's main perception is a contrived 'fear of Indian attack', internationally proclaimed, and providing the basis of their stated need for matching India's strategic and tactical defence capability. This has fitted in well with the US perception of maintaining a 'balance' between India and Pakistan to prevent 'instability and regional conflict'. Pakistan's aided military build up is in many ways of superior quality than that of India's efforts especially in the fields of technology, sophisticated electronics and force multipliers, backed by a wily, sharp-witted, determined foreign policy. India, in turn, has a fear psychosis over Pakistan and our self-seeking politics fuels this fear to its own ends in power seeking. It is only recently that the US Administration has begun to see through the politics of the J&K issue; public opinion and lobbies in the United States are, however, largely misinformed and disinterested in the Indian viewpoint, tending to back the weaker nation. The media in both nations utilise maximum sensationalism for personal benefit rather than encourage mending of fences by informed debate.

Pakistan has found in three wars with India that it is unable to attain its strategic aim for control of J&K by overt and covert military cum intelligence operational means. They have built up their armed forces to equal Indian capability facing Pakistan; since the larger Indian force levels must also cater for defence of our northern and eastern borders. Conversely, India's bonafides are visible in the ceasefire of 1949 (Karachi Agreement); the Tashkent Agreement of 1966 and articles of the Shimla Agreement of 1972; wherein the sanctity of international borders has been maintained intact with West Pakistan as also the line of actual control in Kashmir (with minor tactical changes). This signifies India's acceptance of legal Pakistan boundaries as also the military position of Pakistan Occupied Kashmir (POK), the

latter being subject to political settlement between the two countries. Pakistan's actions, however, are offensive in nature with the attempt to change the military-strategic situation to its own advantage. They clearly wish to acquire the maximum territory possible in J&K, through all available means including Muslim fundamentalistic disaffection, without attracting an Indian military offensive riposte in the plains.

Pakistan attempts to make the Indian State collapse in J&K, and Punjab in the face of insurgent and terrorist assault and the administration's inefficiency and corruption. Pakistan also attempts to garner world public opinion against Indian 'violation of human rights', meanwhile continuing clandestine military support to fundamentalist Indian rebels. Pakistan's strategy in Punjab has so far been to militarily acquire Indian Punjab territory upto a convenient 'defence' line for itself to inhibit Indian counter offensive capability. Since such past attempts militarily failed, the present Pakistan intention is to assist Sikh fundamentalists in creating the buffer state of 'Khalistan' and fully back it militarily and economically.

These Pakistani aims require long term terrorist, insurgency and intelligence operations antagonistic to India both in J&K and Punjab; an option which is the cheapest and surest way to win advantage over what is seen as the shaky Indian administration, with little will or courage for concerted politico-economic, intelligence and military response. The Punjab and J&K terrorist movement is planned in coordination with the well entrenched drug trade, using hard cash in very large quantity to 'buy' selected officials of the local administration and security forces; to control government servants, the press, judiciary and local radio by threat or blandishment, so that the voice of the majority peoples remains muted; the forces of law, order and administration are weakened and fear is rampant: This is Insurgency, the hidden war. A war that requires to be fought as such with single-minded purpose, with the co-ordinated civil, military and economic power of the State, fully backed by public opinion.

THE THREAT OF ECONOMIC WAR

The rapid destabilisation of the international balance of power over the last four years, culminating in the collapse of the Soviet state, has created severe economic constraints in Europe and Asia which are likely to adversely affect third world economies, especially India. The cold war has been won by the US by economic and trade measures, and by greatly increasing the quality of US military threat. The Soviet bureaucratic-cum-political dictatorship's inefficient systems were forced beyond their capacity for matching expenditure capability; this appears to have finally broken the Soviet economy, and resulted in the failure of communist control.

The ongoing economic war is the war by advanced economies for possession of resources and control of markets. The fast depleting resources of the advanced western economies and Japan require increasing dependence on third world resources and availability of markets which must be controlled for proper and efficient utilisation. This war is being fought through advanced technology and economic pressure. It leaves little choice to lesser developed countries but to export their resources to enable import of technology and goods superior to domestic availability.

It would be advantageous for developed nations to retain the present world system of trade and economic controls in their favour. India too must face the prospect of permanent secondary status and catering to western demand for markets by following the international rules as may be arbitrarily laid down; or to expect swift and effective antagonistic action which could cover economic, political and military measures. Hence the need for cooperative action with other similar third world economies such as in groupings like SAARC and NAM; besides clear-headed leadership guidance in generation of combined economic strength and need-based technology, with the social content for our unemployed masses. This requires peace and the rule of law in our sub-continent before markets can function efficiently. It also requires effective population control.

It can be seen that the great military and economic powers would now be least interested in peripheral wars between third world nations such as India and Pakistan. The exception would be if western dominated trade or manufacture is adversely affected which would result in intervention with political and economic muscle. Local Wars, specially in our context, would only bleed us further economically and must only be used as the last resort when all other political, diplomatic, economic and military coercion methods fail. Such war may only be required to be indulged in swiftly and effectively if constant economic bleeding is to be stopped in our concerned border states, adversely affecting our overall economy and trade, and the natural needs of development of our people towards a better life.

THE INTERNAL THREAT

Much of India's internal threat scenario derives from the external threats. In addition, there is political skulduggery between, and internal to our political parties where the appetite for personal power and wealth encourages a turbulent political scene. The germination of internal conflict is entirely of our own volition; the 'foreign hand' needs only to assist and encourage to speed our reduction to a helpless anarchical entity. Our population explosion is one of the basic causes of our political, social and economic degeneration; little is being done to control this factor.

POLITICAL AND ECONOMIC DESTABILISATION

Our political ethos has largely degenerated to immoral conduct and a political-criminal nexus for personal gain. Corruption commences at the hustings when all and every means are employed to get elected with very large sums of money being expended - to buy votes, run a campaign and pay the 'hatchet men'. Corruption continues even in office to enable paying back of dues and retaining power. Parties and selected individuals also organise clandestine initiative to destabilise the central or state governments run by opposing parties or even party colleagues who are becoming too powerful.

This type of cynical and self-seeking power politics gives rise to organised crime and corruption down the chain of governance and amongst those in opposition. Caste, creed and ethnic convulsions are freely organised for wresting political and local economic advantage. The civil police and the state intelligence services are employed more for internal political intelligence and advantage than for national objectives. The legal system and judiciary are corrupted in turn or prevented from functioning by totally clogging the system. The national media largely plays a role beneficial to its sales by sensationalism and caters to the political view points and targets of owners, editors, and advertisement customers. The regional language press is openly partisan and produces highly exaggerated and sensational news which fuels class, caste and religious feuds. Large funds collected by individuals and groups are stashed in foreign exchange abroad, out of reach of Indian Law or government, and awkward enquiries are effectively silenced. The availability of such large funds, assisted by foreign groups, creates its own sphere of application of power to achieve dubious ends, at the cost of the national economy.

TERRORISM AND INSURGENCY

The rise of organised insurgency in our north eastern states, based on political disenchantment with the Indian Constitution, commenced in 1956 and still continues; though political control has been restored in Mizoram and also to a fairly large extent in Manipur, Tripura and Nagaland. The seeds of insurgency and disaffection have spread to Assam since the early 1980s, with adequate money, weapons and training available both internally and from foreign sources including the heroin trade. The Bodos, Gorkhas and various tribal groups are demanding separate states. Most of these movements are clandestinely supported by national and regional political parties for local and immediate political advantage against their rivals, making a mockery of 'democracy' and causing severe constraints on the police and military forces.

The terrorist and insurgent movement in Punjab and J&K became visible in the early 1980s, though careful underground organisation, especially in J&K, started many years earlier. In a similar scenario to our north east states, political parties assisted the rise of terrorist groups, musclemen and 'goondas' to ensure success against opposing parties. Frustrated educated youth did the rest, with brilliant management by Pakistan intelligence including supply of money, training, weapons and organisation. In J&K almost a full generation of youth has been lost to fundamentalism after training in Madrassa Schools attached to Masjids, by mullas trained abroad. The wheel has turned full circle; many local politicians and officials are now under orders of the insurgents on pain of elimination.

UTILISATION OF THE POLICE AND ARMY FOR INTERNAL SECURITY

Inefficient use of these forces of our country accentuates the threat. Police functioning in civic and crime control is inhibited because of political-bureaucratic interference from grass-roots level upwards. States keep raising fresh untrained and poorly motivated armed police units but seldom use them effectively; the constant cry is for central armed police units to help the states to control law and order situations created by local politics. Central police forces thus have little time for training and administration in their multifarious tasks, resulting in the demand for fresh police raisings at much cost to the country. Law and order duties of the police are controlled by the bureaucracy which orders action but has no accountability for failure. We need to ensure that such law and order situations are solely dealt with by state police with minimum assistance from the centre; the Army should not be used at all. But these situations are growing larger by the day in almost every state in India and there is little option left but to call out the Army more frequently as the last resort of government in controlling civil strife.

Counter-terrorism and counter-insurgency operations are another matter. Armed police, with its culture of company level tactical functioning based on local district control, gets 'out of depth' when terrorism expands to rampant insurgency. The Army has the tactical capability and capacity to function from platoon to divisional level effectively and is better organised to fight an insurgency. Examples exist in our northeast states, the operations against LTTE terrorists in Sri Lanka and British Army operations in northern Ireland. To meet the threat of insurgency in our sensitive states, bordering 'hostile' neighbours, there is need for administrative responsibility and accountability to fully assess and assign the correct mix of military and police force, coordinated under the civil government with intelligence and administrative support and a clear channel of command. Debate is

necessary to evolve the doctrine for counter-insurgency and terrorist operations and which ministry of the central government must control such operations, both the Home and Defence Ministries being involved. Such operation should not be managed by Ministry of External Affairs, as was the case for IPKF operations in Sri Lanka, as they are not organised for operational control. A committee type of control as practiced by secretaries from various ministries provides only a forum for discussion and evaluation, not authenticated action with clear objectives and full accountability. Additional forces are necessary for terrorist and insurgency tasks and would effect any discussion on economy. Para-military forces such as the Assam Rifles and Rashtriya Rifles are necessary, functioning under the Ministry of Defence and Army's operational control, in states with proximity to hostile border regions. There is also perhaps a need for such para-military forces readily available within problem states in the rest of the country.

CONCLUSION

The external, internal and economic threat perceived today is even more serious than it has been in past decades. The threat of military conflict has receded to the extent of our continued preparedness on the borders and diminishing political returns from open war. But a more dangerous and subtle scenario of internal de-stabilisation, especially in strategically important border states, is posing serious problems for our security. The danger of future military conflict by an aggressor, supported by co-ordinated destabilisation through insurgency and terrorism in target areas, is required to be faced by us. The aspect of 'nationalities and freedom' struggle of ethnic groups within our country, covertly supported economically, politically and even militarily by unfriendly external states, requires careful thought, co-ordinated national action and international publicity.

In India, the degeneration of politics and statesmanship to self seeking power and corruption is causing a break-down of law and order, a lowering of police and administrative capability and judicial functioning. This is causing greater strain in the Army due to being increasingly called out in aid to the civil authority for law and order duties. Police forces should be quite adequate to the task, but are not able to function with any efficiency due to lack of political will. In many cases our ethnic, religious and social conflicts are motivated by political parties to achieve short term gains advantageous to themselves and antagonistic to any party or group opposing them.

In today's international uni-polar milieu, we face the prospect of

degenerating into a modern day 'colony' with only political 'independence' but economic dependence on world powers. Even our foreign and internal policies are likely to be at the behest of foreign giant economies.

In the handling of our defence services, their future employment, organisation, equipment and budgeting, clear political directions, responsibility and accountability are necessary. Bureaucracy is unable to handle this task with its system of authority with no accountability nor command leadership capability. Technical and military leadership must be given authority and be held accountable for their actions directly under the political leadership. Decisions of force-level cuts whether in the defence services, police, bureaucracy or government undertakings require careful balance and consensus based on national aims. Mere financial 'cuts' or degeneration through inflation in the defence budget is not a viable technique; nor is it appropriate to reduce the Defence Budget in favour of the Home Budget for raising additional forces 'hidden' from public scrutiny. The defence services must also make the 'buck go the farthest' by strict manpower and equipment economy in all organisations and greater dependence on civil infrastructure for logistics support within our borders.

We have many lessons to learn and much careful thinking to be done, based on open discussion, in Parliament, the media and amongst our peoples, besides the Services. At the very base of any future possibility or hope of a better and secure life for our people, is the vital need for selfless political leadership and statesmanship, giving rise to political 'will'. This 'will' and determination to eradicate corrupt and immoral practices and cleanse the administration must itself grow from impeccable personal conduct and determination to enforce the rule of law based on our constitution. Improvement in internal and neighbourhood relations by confidence building measures, including mutual non-interference and force reduction pacts, would follow. Only this will enable the genius of our people to take our country out of the quagmire of the self-inflicted political and economic mess we are in.

There should be no doubt that the people of India are aware of the problems facing the country and are critical of their leadership and administration in the handling of national problems. This gives great hope and optimism for the future. Trends have already commenced in rectification of incorrect actions and improvement in actual implementation of policies, which are showing immediate response from the public. Free and informed debate is essential, both within parliament and amongst the public to encourage clear and peaceful action to meet our threats.

China's Security Policy for the Nineties

VICE ADMIRAL S MOOKERJEE, PVSM, AVSM (RETD)*

INTRODUCTION

During the Seventh National Peoples Congress held end March, 1991 in Beijing, Prime Minister Li Peng and other senior members of the State Council outlined the Ten - Year Programme and the Eighth Five Year Plan for economic and social development, discussed the post - cold and Gulf War international situation and chalked out the basic thrusts of China's Defence Strategy. In this paper, salient features of China's economic, domestic, international and defence policy will be discussed against the back drop of Deng Xiaoping's reform package of the eighties.

THE ECONOMIC SCENE

Whilst China would continue on the path of economic reform and modernisation - particularly in infrastructure and agriculture - the recent Peoples National Conference has taken the view that Deng Xiaoping's 12 years old open door policy needs modification. Emphasis now is not on "speeding up" reform but "deepening reform". According to Prime Minister Li Peng, reform means strengthening the essence of socialism through a process of synthesis with market economy. But, the former will continue to control the commanding heights of China's economy. While its key enterprises will continue to be owned by the state, management will not be. In fact, Li Peng has come down heavily on the inefficiency and losses of public sector undertakings, its low productivity, poor quality and slow cash flow.

According to Prime Minister Li Peng, the reform policy pursued by the Deng Xiaoping has led to an imbalanced development, with costal provinces getting most benefits at the expense of other backward provinces. Reform, according to the Prime Minister, will be judged by criteria of "Social Stability" by following a policy of "Harmonious Development" of all the provinces through a balanced division of labour and allocation of resources.

Prime Minister Li Peng considers China's economic growth in the eighties to be "impetuous" and "over ambitious", which had led to a serious mismatch between supply and demand, high inflation, foreign debt and widening gap between the rich and the poor. Consequently, annual target growth rate

* The author has recently returned from a visit to China.

has been brought down from 9 to 6 percent. Even at the reduced growth rates, Prime Minister Li Peng expects China's GDP to quadruple from 1980 to 2000 AD.

Some relevant statistics about China's economy in 1990-91 are given below :-

- (a) A record grain harvest of 420 million tons which means 385 kgs per capita.
- (b) Amongst cash crops, rape seed went up by 27.5 per cent, Cotton 18 per cent and Sugarcane 17 per cent.
- (c) Imports down by 11 per cent and exports up by 18 per cent after devaluation of YUAN in Nov 1990 resulting in a trade surplus of 7.5 billion US dollars.
- (d) Two billion US dollars losses due to Gulf War.
- (e) Industrial growth slowed down from 8.5 to 7.6 per cent.
- (f) Total external debt is 48 billion US dollars.
- (g) GDP went up 5 per cent in real terms from 4 per cent in 1989-90.
- (h) Annual inflation average 2.1 per cent due to austerity measures but resulting also to recession in demand and stockpiling of consumer goods.
- (j) Huge loss (unspecified) by public sector enterprises.

DOMESTIC SCENE

De-centralisation of fiscal powers of the central Government - a part of reform package initiated in 1984 - is considered by the present Chinese leadership to have weakened the country to the extent that "social and political disintegration of the country" has become a possibility.

Tax distribution between the centre and provinces has become a stormy issue. The system of fixed revenue contracts between the provinces and Beijing has worked out to the advantages of some provinces, but to the disadvantages of Beijing and some other provinces. Economic growth of the provinces has been uneven. During 1984-89, whereas per-capita income has gone up in certain provinces by as much as 160 per cent in many others, it has been around 50 per cent.

Further, trade and investment links between the coastal provinces and the outside world may make Beijing less relevant to more economically dynamic

provinces. For example, Fujian's economy is getting more closely linked with Taiwan; Guangdong's with Hongkong - Macao and north-eastern provinces with Japan. As their economy advances, the relationship between the centre and these provinces will come under severe strain.

Another centrifugal force is the growing demise or dis-appearance from the scene of retired/semi retired older PLA leaders, who were at the vanguard of China's Communist Movements from the thirties onwards. Because, these leaders in the provinces enjoy a personalised rapport with Beijing, based on pre-revolutionary associations in the PLA. This rapport acted as a unifying force between the provinces and the centre. This unifying force is on the decline.

As against above centrifugal trends and tensions, one has to consider the traditionally high degree of economic independence enjoyed by the provinces both during the days of Empire and under the Communist Republic. The centralised political rule has not been inconsistent in the past with regional economic system. Secondly, throughout China, urban residents view themselves as a National Urban Class. Whilst the urban bureaucrat, factory worker, school teacher etc receives exactly the same wage and subsidies in all towns in the provinces, this is not so in the case of rural class. Hence Urban - Rural political cohesion is lacking and severely handicaps any separatist movement.

On the other hand, the urban - rural divide has a potential for a conflict situation between the two. The average per-capita income of the National Urban Class in 1989 was 2.7 times higher than that of the rural class. This differential income is the same as it was during late fifties.

In summary, whilst centrifugal and unifying forces exist in China in a complex manner, the priority given by Prime Minister Li Peng to increased expenditure on Defence and Police Forces would seem to imply that inter-regional conflicts, and conflicts between the centre and provinces are very much on the domestic agenda.

CHINA'S WORLD VIEW

China recognises that with the relaxation in US - Soviet relations, chances of military confrontations have reduced somewhat and the world is moving towards multi-polarisation. But, according to China the harsh reality is that the world we live in is not trouble-free. In fact, China believes that the international situation has become more turbulent and volatile due to growing hegemonism and use of power politics (sic - USA), new power imbalances and surfacing of political, economic and ethnic contradictions hitherto hidden.

In a wide-ranging survey of the international situation during the Seventh National People's Conference, March 25, 1991, Prime Minister Li Peng has focused attention on the problems of peace and stability in the Asia-Pacific, Asean, South Asian and Middle East regions. Whilst the Gulf War has ended, final peace requires enormous efforts and cannot be achieved without a fair and equitable solution of the Palestinian problem. In this regard, China sees a major and primary role by the regional states under the auspices of the United Nations. Implicit obstacles are "hegemonism and use of power politics" in the region.

Whilst welcoming noticeable improvement in Sino-Indian relations and acknowledging the importance of "stable friendly relations" being in the "fundamental interests" of two countries, China has stressed the importance of "traditional ties of friendship" and "continuous expansion" of friendly relations and "co-operation" between China and Pakistan; Bangladesh, Sri Lanka, Nepal and Myanmar. As significantly, Prime Minister Li has drawn attention to friendly relations of China with Thailand, Malaysia and establishment of diplomatic relationship with Indonesia and Singapore. China has also made friendly relations with Africa and Latin America as a main plank of her foreign policy. In April, a secret Chinese delegation visited South Africa whose dismantling of apartheid has been praised. In a nutshell, isolation of India from the Third World in general and South Asian and Asean regions in particular, seems to be a goal of Chinese foreign policy.

So far as Soviet Union is concerned, whilst China welcomes normalisation of relationship and progress in border negotiations, and the goal of "good neighbourly relations" with it, Prime Minister Li has been silent on any role by the Soviet Union either in South Asia or Middle East or Asia-Pacific. The silence is pregnant.

Two countries that worry China, are Japan and the United States. Whilst China considers that development of friendly relations with Japan will be to the "fundamental interests" of the two countries and China's determination to pursue this goal, she is wary of possible resurgence of Japanese militarism in view of China's unfortunate historical experience. China was highly critical of despatch of 2000 Japanese lightly armed troops and six modern mine-sweepers to the Gulf.

Whilst China looks at Japan in the Asia-Pacific context, she views the United States not merely as a country threatening stability in the Asia-Pacific region but also in the "whole world". She is, additionally, very concerned about possible revocation of Most Favoured Nation Status to China on grounds of human rights which China considers to be an interference in her internal affairs.

In short, China considers that with the exit of the Soviet Union from the international scene and her continuing domestic problems, she has ceased to be a power, capable or willing to counter "hegemonism" by US led Coalition. Global turbulence has not ceased but has merely shifted from Europe to the East. China's economic, diplomatic and defence strategy would be dedicated towards creating a constituency of smaller but strategic states in Asia against the United States, Japan and India. To put it in another way, China's aim is to assume leadership of the third world in general and Asia in particular.

DEFENCE STRATEGY AND ASCENDENCY OF PLA

Late Chairman Mao's view on the role of force is contained in his famous statement that, "power grows out of the barrel of a gun". During fifties and sixties, military power in general and People's Liberation Army (PLA) in particular, has been the key element of China's Grand Strategy. However, during the 12 year old reforms movement spearheaded by Deng, both the military and other elements of the PLA had lost their pre-eminence.

However, during the recent Peoples National Conference, Prime Minister Li has made the PLA as one of the key priority sectors for development alongwith infrastructure and agriculture during the eighth five year plan and remaining years in the current decade. Expenditure on PLA which was cut during the 1980's, has been raised by as much as 12 per cent ie., 9 per cent growth in real terms to 4.2 billion US Dollars. This increase has been made inspite of a record budgetary deficit of 15 billion YUAN in 1990-91.

The ascendancy of PLA is attributable to factors both internal and external. As discussed earlier, China perceives herself to be in a strategically disadvantageous situation in the Asia Pacific region and is apprehensive of threats - overt and covert - from the United States, Japan, and their allies. Secondly, after PLA's role in crushing the pro-democracy movement at Tiananmen Square in 1989, and mushroom growth of nationalist, sub nationalist, ethnic and fundamentalist movements in the Soviet Union, Yugoslavia and Africa, the present China's leadership visualise a major role for PLA in suppressing such movements, which may threaten the unity and integrity of China. Finally, the deviation from Deng's market economy oriented reform policy may lead to internal power struggle against current Chinese leadership. In this regard, the PLA can be expected to play a major role.

In view of huge budgetary deficit, and cost of developments of infrastructure and agriculture, rise in military expenditure is planned to be met by taking several steps. The most important is the policy of "Selective Modernisation" based on high technology. China's leadership has come to

the conclusion that the nation cannot afford an across-the board modernisation of the Defence Forces. It is not clear what the selected sectors would be. But in the light of lessons of the Gulf War, the selective sectors are likely to be high performance aircraft, Air Defence, precision guided and ECM resistant missiles, electronic warfare and a blue water Navy. To meet the cost of modernisation a boost in export of arms to selected third world countries may be expected. Further, reduction in personnel-cost to generate internal resources seem to be on the cards. The long border with the Soviet Union has considerably quietened as has part of the border with India. In a mid-term scenario, the Soviet Union ceases to be a threat to China. Keeping in mind the expected improvement in Sino-Indian relations during the remaining years of the decade, China is likely to reduce her huge standing Army whilst improving mobility, striking power, and command and control through high technology.

In addition to the policy of "Selective Modernisation" a significant feature of China's new Defence policy is the inter-changeability between Defence and Civilian Research and Developments. The object is to enable the PLA to call upon civilian R & D to serve Defence needs, if required. This is a return to Mao's policy and reversal of Deng's. As Chairman of Central Military Commission (CMC), Deng had, as a part of his reform package, made military R & D subservient to civilian R & D.

CONCLUSION

The exit of the Soviet Union from the global arena, proven potency of US military power during the Gulf War and consequential activist, high-profile foreign policy of the United States cause China deep concern. Global focus has shifted from Europe to Asia-Pacific where China finds herself in a disadvantageous geo-strategic situation. Most worrisome to China is Japan's growing politico-military resurgence.

As a counter to "hegemonism and use of power politics" China is casting her strategic net far and wide with special attention to South Asia, Asean countries and Africa. Whilst China welcomes normalisation and improvement of ties with the Soviet Union and India, neither of these countries fall in the category of China's traditional friends with expanding co-operation as is the case with Pakistan, Bangladesh, Nepal, Sri Lanka and some Asean countries.

Whilst China will continue on the path of economic reforms, the thrust is now towards deepening rather than Deng's policy of speeding reforms. These reforms will be contained within her socialist framework through a

process of synthesis with market economy and managerial revolution to revamp inefficient public sector undertakings.

Chinese economy in 1990-91, compared to 1989-90, has done well. But, to ensure the primary goal of social stability, the "impetuous and over ambitious growth rate" of the eighties has been slashed down from 9 to 6 per cent.

Present Chinese leadership is concerned about uneven development amongst the provinces, fiscal imbalances between Beijing and some provinces. Coastal provinces are developing closer economic relations with Japan, Hongkong, Macao and Taiwan than with the Centre. This is causing strain in Centre - provinces relations. Present Chinese leadership - due to Chinese domestic contradictions and tensions - is wary about the phenomenon of sub-nationalism, fundamentalism and ethnic conflicts now sweeping the Soviet Union, Yugoslavia etc., crossing over to China.

Deng's reform package that downgraded the role of PLA, has been rejected by the recent Peoples National Conference. In a way, it is a return to late Chairman's doctrine of role of force in national and international affairs. Inspite of big budgetary deficit and urgent developmental expenditure, defence budget has gone up considerably. As importantly, civilian R & D has been made subservient to Defence R & D - a reversal of Deng's policy.

However, to keep the cost of high-technology defence modernisation down, a policy of "Selective Modernisation" as distinct from previous across-the board modernisation has been adopted. The "Selected Sectors" have not been specified. But, lessons of the Gulf War may be expected to govern the selection. Finally, we may expect selective arms sales to third world regions to partially finance the cost of modernisation.

The Military Quest for Excellence

The Mental Approach to Quality

BRIG N B GRANT, AVSM (RETD)

Immediately after Independence and right up to the Sixties, the military concept of professionalism was the 'officer and a gentleman' type of management style. During the Seventies, the professional emphasis shifted to management of inter-services cooperation. In the Eighties, the professional stress was on management of high technology. Today, in the Nineties, the military is hankering after management of quality, also referred to, perhaps wrongly so, as management for excellence. This is not restricted just to the military, as the 'quality' bug has bitten civil management even more so, specially after the advent of the Japanese thrust into the Western markets, where the word 'Japanese', has now become synonymous with the word 'quality'.

Everyone today talks about 'quality' and 'excellence', without really knowing what it really implies, and as if it was a thing which could be touched, seen or felt by the senses. The word quality and excellence has now become a status symbol both with industry and the military, and even our erstwhile Defence Inspection Organisation, thought it proper to rename itself as Directorate of Quality Assurance, without really being sure of the nature of quality it is assuring, and to whom. It will be worthwhile therefore, to spend some time in reunderstanding this nebulous word 'quality', now more popularly called 'excellence.'

To begin with, it must be made clear that, the term 'excellence' or 'quality', is not a new innovation of the nuclear age. We had heard about it even in the 19th century, and perhaps earlier. For example, the Rolls-Royce was not only the best car in the world, but the word itself became synonymous with quality. Same was the case with Rolex watches, Wilkinson's blades, Dacca muslins and the Pashmina shawls, all emblems of quality and excellence. Similarly, institutions like Harvard and Stanford in the US, Cambridge and Oxford in the UK, and perhaps the Doon and Mayo in India, came to be considered centres of excellence in education. Even in the military, the same connotation of excellence applied to regiments of the Indian Gorkhas or the British Cold Stream Guard or the US Marines - all of them epitomes of excellence. There is no end of such examples, whether of products, institutions, or even in the field of various disciplines like medicine, engineering, science etc. whether in civil industry or the military.

Secondly, it would be necessary to define the terms of reference for measuring excellence. For example, in an institution, or a business house, or even in an army regiment, it may be one that produces or turns out excellent end products in the way of goods or personnel. It could also be one that gives maximum job satisfaction, or has excellent human relations. In case of an industry, it may be one that gives excellent after-sales service, although its products may not be that good. However, by and large, the most commonly understood term is the one that signifies the end use of a product or service. For instance, a Cadillac or a Mercedes, may be excellent cars in the United States or Europe, but can they be termed as such for the jungle tracks of Africa, or the heat, dust and potted roads of India, with its polluted air and adulterated fuel? Similarly, although the excellent technology was the mainstay of Op Desert Storm, however, would it deliver the same results in the mountains of Kashmir or jungles of Assam? For that matter, take our military colleges like the AFMC and CME -- both excellent institutions per se, but as an end product, have they really produced internationally, or even nationally, renowned doctors or engineers, who could be called excellent? Thus, there can be no absolute quality rating for a product or an institution, without relating to its intended end use.

Thirdly, today, the term high technology and superior quality seem to get mixed up. For example, although the Pokhran nuclear blast was high technology, however, the delay caused by the Chairman Atomic Commission, Mr Sethna, in not being able to inform in time the then Prime Minister, Mrs Indira Gandhi, was a reflection of the inferior quality of our communication system. Similarly, Gen Sundarji's ushering in of sophisticated equipment and the computer era in the army spelt high technology, however, it did not produce the expected quality results in Op Blue Star or Op Pavan. Thus, the whole concept of quality or excellence has to be considered by itself, and not in relation to its affiliated high technology.

At this stage perhaps, it may be worthwhile to examine the quality position as accepted in India. With a view to improve the quality of all our goods in general, the Government decided to set an example, by bringing out a product which would act as the vanguard of quality for others to copy. For this purpose, it chose the Maruti car to be the Indian flag-ship of quality. However, in this, we made two mistakes, namely (a), as mentioned above, we confused high technology with superior quality, and (b), we concentrated more on the physical rather than on the mental approach. When Osany Suzuki, the President of Suzuki Motors, visited India, he had shown concern, whether our Maruti could retain its quality once it was Indianised, specially in respect to the quality of components, spares and after-sales service. He said that - "If Maruti wants Japanese cost and quality,

it must also accept and implement Japanese systems 100 per cent". This would entail, reviewing -- (a) new concepts of quality, (b) the philosophy to be adopted to improve it, (c) the managerial aspects to achieve it, and, (d) the national culture to nurture it.

"Of course, the physical measure of the factory product also counts."

It will be noticed that, the physical measure of the factory product was placed last by him, as of little significance. To him, it was the mental approach to quality that really mattered.

However, so that we all are on the same net when describing the physical measure of quality, it would be interesting to compare Japan with a highly developed country like the United States, leave alone a developing one like India. A survey of a common user item like the room air-conditioner, manufactured by using the same type of equipment and similar assembly line process shows that, on the average, the total failure rate in the poorest Japanese company was less than half of the best American manufacturer. Its internal failure rates per 1000 units for US and Japan respectively were found to be as, coil leaks 4.4 vs 0.1, assembly line defects 6.35 vs 0.95, and electrical defects 3.3 vs 0.12. Similarly, the external failure rates per 1000 units under first warranty coverage in US and Japan were respectively, compressors 1.0 vs 0.05, thermostats 1.4 vs 0.002, fan motors 0.5 vs 0.28, and others 10.5 vs 0.6. The quality vs cost factor of the two countries was even more significant; whereas the warranty cost as a percentage of sales in the average Japanese company was 0.6 per cent the same in the best US plant was 1.8 per cent and was as high as 5.2 per cent in the poorest US factory. If this is the difference in the measure of quality between Japan and US, one can only conjecture what the difference would be between Japan and India.

Historically, it was World War II, which generated a great upsurge in industrial activity in Western countries, with tremendous requirements of defence stores, that necessitated scientific method of quality control. As conventional inspection methods were inadequate for this purpose, statistical methods like sampling tables and control charts were introduced, which reduced the burden on the inspection organisation and enabled it to cope with mass production. Although Statistical Quality Control (SQC) did increase the efficiency of the inspection organisation, and enlarged the area of control to include in-process check, it still remained an extension of inspection, as it tackled the quality problem only at the shop-floor-level by the physical inspection of a part of whole of the product. It did not take into account the contribution of other functional groups and could not view the problem from the overall organisational perspective as the management saw it.

In any case, Defence was the first organisation in India to take full advantage of the inspection system of quality control, and has since expanded its World War II inspection cells into a full-fledged Inspection Organisation with a Lt General at its head, and with Inspection establishments located throughout the country. In this respect, however, even today, there exist three separate, distinct and independent organisations in the manufacturing process of a military hardware, namely, the R & D, Ordnance Factories, and the Inspection Organisation, (since renamed Directorate of Quality Assurance) with co-ordination, if at all it can be called that, taking place only at the level of the Secretary, Defence Production. Thus for all practical purposes, managing quality in the Defence remains the sole responsibility of the Director General of Quality Assurance, but whose main function, however, still remaining 'Inspection'.

Thus, both in civil industry as well as in Defence production, the managerial function for achieving quality also requires a new approach. There was a time when the user gave his requirement, the General Staff issued a QR, the R & D designed the products, the Ordnance Factories built them, quality personnel inspected them as they came off the line, and the user accepted them. If a problem existed, manufacturing people were expected to correct it, to make things 'right'. Quality was not an overall approach to doing business, but an after-the-fact measurement of production success in statistical terms; so many defects per thousand units, and so many deviations from the specs. Managing quality was the responsibility of a handful of low-ranking, not very well respected measurement takers in each department. In civil industry at least, this has now all changed, and managing quality is reflected at every stage of the product development continuum from design to acceptance. Inspection alone cannot build quality into a product. Today, whether in civil industry or Defence production, the R & D, process planners, production managers and even maintenance personnel, have their role to play in the achievement of the primary quality objective, which is, 'Maximum User Satisfaction at Minimum Cost'. The quality of customer (or user) service after the sale (or acceptance) is often as important as the quality of the product itself. Poor after acceptance service can quickly negate all the advantage associated with developing a product of superior quality. Successful manufacturing organisations of today will have to use selling techniques, to plan, design and implement quality strategies that stretch beyond the factory floor. Thus, like integrity, quality has to be in its totality. It will be recalled that, just as marks are no longer given to the 'integrity' factor in an officer's ACR, even 'quality' is indivisible, and must permeate every facet of an organisation. It cannot be isolated in any one function like 'Inspection' or 'Quality Assurance', like what the DGQA is attempting to do.

One can always question that, why, inspite of quality management not being built intrinsic into the manufacturing process of military hardware indigenously produced in the country, how come the army equipment is still able to function on slogans like, 'the motor-cycle must start at the first kick', 'every bullet must fire the very first time', and that 'in war there are no prizes for the runner-up', etc? The answer to this is that,

- (a) it is achieved at the cost of maintaining a huge inspection organisation like the DGQA,
- (b) backed by a large maintenance organisation like the EME, and ofcourse,
- (c) enforced by military discipline.

The fact that even today, 85 per cent of our defence equipment, in monetary terms if not in numbers, is still imported, is a different matter, but one which suggests that the quality of the equipment we boast of, is really of foreign origin. The main fact however is this, that in the indigenous production of our military hardware, quality control is still based on rejects and replacements, and not on quality management of the basic design, R & D, and the manufacturing process as a whole, treated in its entirety.

Returning back to the mental, rather than the physical, approach to quality, many of our industrial organisations, and on the call given by our DGQA, Defence enterprises, to quote a few like BEML and HAL, to mention just one such technique, have gone headlong with the concept of Japan's now famous Quality Circles, in the mistaken belief that, this is the ultimate panacea of our quality ills. Without going into the details of the technique, for the lay reader, the Quality Circles programme provides a vehicle for unlocking the potential for worker contribution for the growth and development of the organisation. The Circles enable the management to tap otherwise unused abilities and information from workers and other employees, by allowing them a fuller participation in all aspects of the manufacturing process, and thus giving them more confidence and dignity. While it is conceded that the concept of quality Circles has no doubt been a major contributory factor towards the remarkable achievement of quality in Japan, one must remember that, in that country there already existed the basic pre-requisites for its success, such as, awareness of the need, an atmosphere of co-operation, acceptance of change, educational background and active management participation. Besides this, the behavioural question raised in Quality Circles by the nature of reward in the form of personal recognition without monetary gains, is a questionable assumption in the Indian context even in Defence industry. It is agreed that, money is not the only motivator, but in a poor country it is still a prime incentive. The simple truth is that, in the Indian industrial setting, mere psychological recogni-

tion without monetary gains, is not an adequate reward for extra performance done voluntarily, and which is at the heart of the Quality circle concept.

Let us now examine some special concepts of quality or excellence as applicable to the military in general, and to some of our technical arms and services in particular. To begin with, let us take the Army Medical Corps. In days gone by, the excellence of the old Indian Medical Service (IMS) doctor was such that, the last wish of a dying civilian patient was to be treated by the IMS army doctor. Even if he died, he got the mental satisfaction that, he got the most excellent medical attention possible. This then was the measure of excellence of the IMS army doctor in the Country at that time. It is still so in countries of the West, and more so in the USA, where the countries best quality hospitals are run by the military, for example the Walter Reed Army Hospital, to which the US President, and all other top officials go to when sick. Unfortunately, it is just the reverse in India, in that, leave alone civilians, but even military personnel if they could afford it, would rather be admitted to a civil nursing home or hospital, then in a military hospital, for any serious ailment. However, this article is not the forum to discuss this matter. It will suffice to show the lack of confidence which we have in our military hospitals, which once were the symbol of excellence.

Coming nearer home to my own Corps of Engineers, we have still to define what constitutes the excellent Sapper. Should he be excellent in his technical knowledge and skill, or should he be excellent in tactics, or both? History shows that, a commander always wants his Sapper to give him excellent technical advice, which he can then apply to his tactical plan -- the reverse is not true. History also shows that, the reputation of the Corps of Engineers has always been on its engineering feats, whether in war or peace, and hardly ever, if any, on its tactical performance. Yet, our Engineers are the only army of any army in the world, and of any Corps even within our army, wherein they are still divided on the concept of excellence, namely, -- excellence in works or excellence with troops, and in the bargain its reputation has never really excelled in either. However, again, as with the case of the Medicals, this is not the place to discuss this further.

Last, but not the least, we must examine, yet another example applicable to all arms and services, namely, the quality of the military officers 'word'. Even if we accept some come-down in the standard of excellence of some of technical arms and services, we cannot accept under any circumstances, the quality assurance that can no longer be placed on the army officer's word, and his signature on a cheque. Of all the other

military factors which may have come down in quality, this is the most damaging. In days gone by it was accepted that, as the military officer lived with a select quality group, he was never to worry about the excellence of an officer's word, because, he was as good as his word. This then was the central focus of excellence around which the soldier's life revolved. It effected his quality standards of self, his expectation, and even how he raised his children. The whole picture now seems to have changed, as the soldier is no longer placed on the same pedestal of excellence of trust, that he once was, even though professionally and technically he may have advanced much further than his forefathers ever did.

By now the reader must have realised that, quality or excellence is not a substance, or a thing, or a feature which one can see, feel and smell, but that it is very much an attitude of the mind. Taking a recent example from industry, two years ago, when the US firm IBM, was developing the 64 bits chip for its new generation of Defence computers, it sent out a team to Japan's Matushita Electronics (the major manufacturer of this item in Japan), to study their techniques and methods of developing this. When the US Defence team arrived at the Japanese factory, the technical advisor to the firm, Hajime Karatsu, addressed them saying, "Gentlemen, to be honest, I wonder what you will see. It might not be valuable if you only see our equipment or our techniques. Rather, I would like the team members to look at what our employees are thinking, and how they are behaving."

In the ultimate analysis, the quality of a country's products, both civil and military, are not just the outcome of one or two quality oriented industries or regiments. It is the net result of the quality consciousness of the nation as a whole in all facets of its working life, of which industry or the army are only some of its components. It is not enough to take up one or two items as a measure of quality. The concept of quality must become a way of life in all our day to day activities. In Japan, for instance, the way Honda manages quality in the manufacture of its vehicles, is no different from the way the Japanese housewife manages quality in her Ikebana flower-arrangement, or the way the Japanese geisha manages quality in her tea ceremony, or for that matter, even the way the Japanese soldier committed harakiri.

To sum up, all the factors contributing to 'excellence' mentioned in this paper, are only adjuncts to the two main facets, which are at the heart of the Quality concept. Firstly, quality, like integrity, is not divisible -- it must be conceived in its totality, and cannot be considered in isolation for any particular product, service or function. Secondly, excellence, is not a product, it is also not quality circles, statistical quality control, zero defect, or high technology. Excellence, is a way of life, whether it be in industry or the military.

Swords and Shields : Technology, Strategy and Ethics

PROF M ZUBERI*

*All the autumn the chafe and jar
of nuclear war;
we have talked our extinction to death.*

“I find myself” wrote Robert Oppenheimer, “in profound anguish over the fact that no ethical discourse of any nobility or weight has been addressed to the problem of atomic weapons.” Apart from some individual expressions of profound moral anxieties, the Bomb’s continued sullen presence had resulted in what might be called a complacency of despair. There have been cycles of nuclear anxiety and apathy ; these cycles are related to the heightening of nuclear fears followed by progress in arms control and detente. Even during periods of comparative neglect of the nuclear threat, however, nightmares, fantasies and inarticulate forebodings have been persistent throughout the nuclear age. The language of the “nuclear priesthood” tended to trivialize this awesome threat. The prudential and game-theoretic terms in which the strategic discourse was conducted was a symptom, to some social thinkers, of what may well be called a radioactive decay of ethical values.

The last decade witnessed an outburst of normative concerns and profound philosophical and even theological questionings of the very foundations of nuclear strategy. The belligerent rhetoric of the first Reagan administration contributed significantly to this unease. Scientists, physicians, church leaders and even former pillars of the security establishment like George Kennan and Robert McNamara have raised their voice against the dangerous twist to the arms race at the beginning of the 1980’s. Now there are ‘Generals for Peace and Disarmament’ and Bishops against Nuclear War.

The ‘Nuclear Priesthood’ was confronted by an unexpected challenge from the real priests in the form of the Pastoral Letter of the American Catholic Bishops issued in 1983. This was the third and final draft of a letter which had been the subject of extensive public scrutiny. Responding to the growing public anxieties about the dangers of nuclear war, the bishops

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consulted 50 experts on nuclear strategy and made a detailed study of the literature on the subject. This was a sobering experience for them. The letter is detailed and complex in its reasoning. It explains the reasons for the bishops' involvement in a complex problem which apparently seems to be unrelated to their pastoral preoccupations: "The nuclear age is an era of moral as well as physical danger. We are the first generation since Genesis with the power virtually to destroy God's creation. We cannot remain silent in the face of such danger".

The nuclear threat, in their view, transcends all religious, cultural and national boundaries. Quoting the words of Pope Paul VI condemning the bombing of Hiroshima and Nagasaki as a "butchery of untold magnitude", the letter discussed the "cosmic dimensions of the arms race" and "the threat posed to the human family". After discussing doctrines of limited nuclear war and counterforce targeting, the bishops warned that "modern warfare is not readily contained by good intentions or technological designs." Admitting the complexity of nuclear strategy and the importance of national security, they observed: "to say No to nuclear war is both a necessary and a complex task." They recommended a comprehensive nuclear test ban and an immediate verifiable agreement "to halt the testing, production and deployment of new nuclear weapon systems". The bishops left what one prelate has described as "a centimetre of ambiguity" when they discussed nuclear deterrence and gave it conditional acceptance as "a step on the way towards progressive disarmament". They especially addressed the armed forces, the scientists and those working in the defence industries. Although they emphasized that every postulate in the letter did not have equal religious or ethical validity, the thrust of the argument was in the form of a plea to all Catholics to probe their consciences before taking any decisions impinging on the nuclear issue. The pastoral letter is not an exercise in generalities but is at times a tortured discussion of American security policy.

The casual chatter of members of the first Reagan administration about the nuclear warning shots and 'prevailing' in a nuclear war had produced an undercurrent of general public unease which resulted in the sudden popularity of a movement in the United States to freeze the existing nuclear stockpiles leading to the eventual reduction and possibly even elimination of thermonuclear armories. A resolution supporting the freeze was defeated in the American House of Representatives by a margin of two votes in 1982. The Pastoral Letter represented the growing moral challenge to the doctrine of nuclear deterrence.

An additional complication for the nuclear warriors was the difficulty in finding a suitable basing mode for the MX missile. At the beginning of the 1980's, the missile alone was estimated to cost about \$10 billion.

Construction of 4,600 shelters for it was to add another \$19 billion. The 200 missile sites would have required construction of 8,000 miles of roadways in addition to the shelters and command facilities. This gigantic enterprise called for 600,000 tonnes of cement, between 32 and 48 million tonnes of sand, 210 million gallons of liquid asphalt, 125 million gallons of fuel and 17.9 billion gallons of water. The Mormon Church expressed its vehement opposition to the construction of the missile. After the rejection of 33 basing modes for it, the extravagant construction requirements were reduced by the decision to place the missile into the Minutemen silos.

While the Reagan administration was facing these problems, a small group had been meeting secretly to plan its strategy for a shift towards strategic defence. Retired Lieutenant General Daniel O. Graham, former director of the Defence Intelligence Agency and founder of a lobby for space-based defence called the High Frontier, had been meeting Ronald Reagan since 1976. Edward Teller, a veteran of the Manhattan Project during the second world war which resulted in the atomic bomb and the so-called 'father' of the H-bomb, had been engaged in promoting the third generation of nuclear weapons. He briefed congressional leaders on the latest researches done at the Livermore Laboratory and lobbied with the Joint Chiefs of Staff and the civilian officials of the Department of Defence. He also met Admiral James Watkins, Chief of Naval Operations, who, as a devout Catholic, was disturbed by the moral challenge to the doctrine of nuclear deterrence and had even prepared a confidential paper on the subject conveying his anxieties to the President. Teller and Graham started regularly meeting members of Reagan's so-called Kitchen Cabinet which consisted of Karl Bendetsen, a retired businessman and a former Assistant Secretary of the Army, William Wilson, a rancher and an oilman, and Joseph Coors, a beer magnate. This small group was briefed by Teller on exotic technologies like lasers, while Graham championed the cause of non-nuclear space defence which could be developed on the basis of existing technologies. The group discussed strategic defence with Reagan and his close advisors at the White House on January 8, 1982. Teller had several meetings with the President in subsequent months.

It was this privileged group of elderly advisors which influenced Reagan more than his regular advisors within the administration. George Keyworth, his science advisor and a protege of Edward Teller, was "surprised, shocked, even stunned" when he was told on March 19, 1983 that the President wanted to know whether it was "a good time to renew efforts in strategic defence?" Despite his early misgivings and advice by his scientific colleagues that he should "fall on the sword" and resign, Keyworth prudently supported the President's search for strategic defence. Top officials in the

Pentagon were kept in the dark and found themselves in the embarrassing position of finding justifications for a shift in American strategy. Richard Delauer, Under Secretary of Defence and an expert on missile defence, was informed only a day before the President's speech. It was to be a standard threat speech aimed at generating support for increased military funding. Only a small coterie of his close aides were privy to the 'insert' which was to announce a major departure in American strategy. Reagan had said to Teller, "Edward, you're going to like it". Some veteran scientists of the Manhattan Project had been invited to the White House to watch the President make the televised appeal; it was hoped that they would declare their support for the proposed shift in strategy.

During the closing moments of his televised speech on March 23, 1983, Reagan suddenly changed the topic and said that it would be better to save lives than to avenge them. He then told his audience that he wanted to share "a vision for the future which offers hope" and proposed that the United States should embark on a programme to combat the Soviet missile threat with defensive measures. He called upon the American scientific community, "those who gave us nuclear weapons, to turn their great talents now to the cause of rendering these nuclear weapons impotent and obsolete".

The speech was an extraordinary event; although Reagan referred to "careful consideration with my advisors", he had announced a major revolution in the nuclear order based on the supremacy of the offensive without an analytical effort within his scientific and strategic bureaucracies and without any consultations with the governments of America's military allies. George Keyworth said: "This was not a speech that came up; it was a top down speech... a speech that came from the President's heart". Reagan had made a major policy statement suddenly altering the foundations of nuclear strategy and Soviet-American relations without any advance warning. The speech launched what was officially called the Strategic Defence Initiative, popularly dubbed Star Wars. The underlying idea was to devise a defensive technology which would restore the protective insularity of the United States threatened by essential equivalence in offensive thermonuclear armories between the United States and the Soviet Union. The seductive appeal of the Star Wars was the promise of American security without bothering about improving relations with the Soviet Union and to regain the moral high ground which the critics of nuclear strategy had claimed for themselves. Reagan combined the American faith in moral exceptionalism with the belief in finding technological solutions to intractable political problems. "Star Wars", says E.P. Thomson, "is the ultimate decomposition of deterrence theory, and the attempt by the United States' nuclear ideologists to return to the womb of Hiroshima".

II

The one link between Truman's decision to make the Hydrogen Bomb and Reagan's Star Wars Speech of March 23, 1983 is Edward Teller himself. He now maintains that the Hydrogen Bomb controversy of 1949-50 was the first occasion when some scientists preferred to remain ignorant of technical possibilities. He had then advocated work on the Hydrogen Bomb, an offensive weapon, and now he supports research on defensive weapons. "Now, as then, my argument is for knowledge and against ignorance." The present controversy is in many respects more "ferocious." Scientists opposed to research and development now have been out of touch with technical progress for a longer period than those in the previous controversy. The younger scientists who are now in the forefront of research have not yet been given due recognition within the scientific community. While the Hydrogen Bomb controversy was confined to a small elite within the United States, the present debate is conducted in public and is international in character. Moreover, the strategic situation is very different. In 1949, the United States had the most powerful nuclear arsenal in the World. Now there is essential nuclear parity between the United States and the Soviet Union in a world of several nuclear powers.

There are other differences as well. During the earlier debate, although ethical and moral considerations were registered, especially in the minority report of Enrico Fermi and I.I. Rabi, there was no continuing discourse on this issue. The moral high ground is now occupied by supporters of strategic defence. Albert Wohlstetter says that the offensive deterrence strategy makes "murder respectable." Fred Ikle, Under Secretary of Defence for Policy in the Reagan administration, had, in a widely circulated article, declared in 1975: "The jargon of American strategic analysis works like a narcotic. It dulls our sense of moral outrage...it blinds us to the fact that our method of preventing nuclear war rests on a form of warfare uniformly condemned since the Dark Ages - the mass killing of hostages." He now maintains that mutual societal vulnerability would "corrode the confidence upon which civilizations are built."

The Hydrogen Bomb was a single weapon being pushed by its supporters within the closed circle of decision makers. Strategic Defence, however, will be based on the coordinated operation of a whole series of weapons systems and devices.

The most obvious similarity between the two decision is the resort to a technological fix for a security problem which is primarily political. The main difference, however, is that while a strategy had to be devised to accomodate the awesome power of the Hydrogen Bomb, the Strategic

Defence Initiative demands technological innovation to satisfy the requirements of strategy.

The young scientists engaged in research for the Strategic Defence Initiative are driven by intellectual curiosity and the technical challenge of reaching into exotic regimes of high energy physics where they deal with cataclysmic energies, distant frontiers of computer science and remotest reaches of sensing and communications. Hans Bethe has drawn attention to an interesting aspect of the technological imperative which is the driving force for the scientists: "Having recognised that there is little more to be done in improving offensive weapons, they are enthusiastic advocates of defensive weapons, and in this advocacy they are finding a very receptive government"

The most prominent group of these scientists is doing research at the Livermore Laboratory led by Lowell Wood, a protege of Edward Teller. These young scientists are connected to Arpanet, a global electronic network linking more than 300 computers and 50,000 people in the United States and Europe working in weapons laboratories, military command centres and universities. "We're working on weapons of life", says Larry West, "ones that will save people from the weapons of death. It's a moral decision and I believe in it very strongly". Access to the fabulous equipment of the weapons laboratory and to the Nevada test site makes the task fairly exciting.

The career of young Peter Hagelstein illustrates the internal brain drain from welfare to warfare. His ambition was to win a Nobel prize by developing a laboratory X-ray laser for applications in biology and medicine. Needing expensive laboratory facilities for this purpose, he started temporary work at the Livermore laboratory while still a Ph.D student at MIT. Despite his aversion to nuclear labours and the vehement opposition of his girl friend, he got entangled in weapons research. He worked on the nuclear-powered X-ray laser which became a major component of the Star Wars project when it was launched. After the successful underground test on November 1, 1980, Peter's attitude towards nuclear weapons changed. "Until 1980 or so" he said, "I didn't want to have anything to do with nuclear anything. Back in those days, I thought there was something evil about weapons. Now I see it as an interesting physics problem". His intellectual and humanitarian pursuits had been diverted to military purposes. Disenchanted at last, Peter Hagelstein went back to MIT in 1986 to concentrate on pure research.

The Livermore Laboratory was established in the early 1950s in response to Edward Teller's disenchantment with the Los Alamos Labo-

ratory. Teller believes in the beneficial effects of competition between weapons laboratories. He is a nuclear optimist who has tried to harness nuclear energy for constructive purposes after becoming the so called "father" of the H-bomb. During the 1960s he was the main promoter of peaceful uses of nuclear explosives. As early as 1963 he had argued in favour of high altitude nuclear testing in order to devise an X-ray laser pumped into outer space by nuclear explosions to destroy missiles in flight.

The contemporary discussion of this "pop - up" version of X-ray laser is a tribute to Teller's persistence "What is common to the new defence systems", Teller says, "is that they are sharply directed against individual objects. Weapons of mass destruction are indiscriminate; directed-energy weapons are highly discriminating". He calls them "antiweapons". As for nuclear-pumped space systems, he is categorical: "If the offensive missile is stopped at least a mile above the earth's surface, the defended population could probably sleep through an effective defence even if small nuclear weapons are used. "Answering criticism of the Star Wars project, Teller maintains that a completely leak-proof defence against ballistic missiles is not possible; the United States must aim at "some defence, not a perfect defence". While Ronald Reagan's casual offer of sharing Star Wars technology with the Russians is generally dismissed as of no practical consequence, Teller maintains that it is "the most realistic political step yet proposed".

The most remarkable feature of this enterprise is the passion with which it is advocated by its supporters. The star warriors are like theologians who are passionately committed to the unverifiable and, in the words of Michael Howard, "as in theology we shall discover who was right only when it is too late to do anything about it". The American scientific community is splintered on this issue. The supporters passionately maintain that it is technically feasible to devise a fairly effective defensive technology within the next few decades; the critics marshal arguments to the contrary. As the discussion is about the future course of technology, there is plenty of scope for an acrimonious debate.

The supporters are led by Edward Teller and the critics by Hans Bethe. Teller has accused Bethe of changing his scientific judgement of technology "on the basis of his ideas about proper politics and military strategy". Bethe, along with Richard Garwin and a few other experts from Cornell and MIT, had prepared an assessment which was published by the Union of Concerned Scientists under the title *The Fallacy of Star Wars*. Robert Jastrow, an astrophysicist, mounted an attack on this publication in which he wondered how some of "the giants of twentieth century physics" could

have lent their names to "an effort that is pretty good for high school students but not good enough to stand up to more than thirty minute scrutiny by defence professionals." He resolved the dilemma by quoting Lowell Wood: "Is Hans Bethe a good physicist? Yes, he's one of the best alive. Is he a research engineer? No. Is he a military systems engineer? No. Is he a general? No. Everybody around here respects Hans Bethe enormously as a physicist. But weapons are my profession. He dabbles as a military system analyst."

This personal attack on some of the most eminent scientists of the United States was endorsed by Teller, Lowell Wood and a few other supporters of strategic defence. Lowell Wood praised Jastrow for "documenting how sloppily this tiny group of scientists compound their nostrums and with what generous dollops of bias." He added for good measure the comment that "these individuals, capable scientists though they may be, do not merit the political confidence of their fellow citizens." While Edward Teller concedes that perhaps a majority of American scientists are opposed to Star Wars, his protege, Lowell Wood, maintains that the number of scientific critics can be "counted on the fingers of a maimed hand."

The intensity of the scientific opposition can be measured by the fact that at a time when alternative sources of research support are dwindling, thousands of scientists have signed a pledge refusing to accept funding from Star Wars projects. By the spring of 1986, the pledge had been signed by more than 3700 professors and 2800 junior faculty members. The signatories are in majority at 109 physical science and engineering departments of 72 American campuses. Particularly striking is the large number of physicists at the most prestigious universities like Harvard, Cornell, Princeton, Stanford and the California campuses. The director of the Innovative Science and Technology office, on the other hand, maintains that the office has received research proposals from 12,000 academics. As for those who have signed the pledge not to participate in this enterprise, he said contemptuously: "My insurance agent is just as qualified to comment on the technical feasibility of SDI as a Nobel laureate."

The supporters of the project are no longer a unified camp as many schisms have appeared recently. The roof fell in November 1985 when it was revealed that there were "unresolved scientific issues associated with the difficulties of measuring some properties of X-ray laser." Implicit in this official acknowledgement was an admission that claims of technological break-throughs had been premature. Roy Woodruff, head of the X-ray laser project at Livermore, resigned from his job. Peter Hagelstein, the brightest star of the Livermore group of young scientists, left for MIT; and

Lowell Wood declared at a public debate in October 1986 at the University of California, Berkeley, that he could not assert the technical feasibility of strategic defence as it would be intellectually dishonest.

The American Physical Society had appointed a panel in November 1983 to assess the technical potential of directed-energy weapons. The panel had two co-chairmen - Nicolaus Bloembergen, a Nobel laureate who had done work on lasers, and C.K.N. Patel, head of physics and academic affairs division of the AT & T Bell Laboratories who had invented the carbon-dioxide laser. The report of the panel was released in April 1987. Its conclusion was that most crucial elements required for directed-energy weapons systems "need improvements of several orders of magnitude" and that because the elements are inter-related, the improvements must be achieved in a mutually consistent manner. The panel focussed on directed-energy weapons because they would be needed in almost all stages of the destruction of incoming missiles. As for the much touted X-ray laser, it maintained that "the feasibility of making a militarily useful X-ray laser remains uncertain." Referring to the long duration of the research phase of the project, the panel observed that it would be spread over many years which will provide ample time for counter-measures to be developed. Even the report of this prestigious panel of the American Physical Society was dismissed by Robert Jastrow with the comment that "the scientists know as much about defence against missiles as an eye doctor knows about taking out your appendix".

Apart from this acrimonious debate, there is an acute controversy among the computer software specialists regarding the complex requirements of battle management systems. The software dispute became public in June 1985 when David Parnas, a member of SDI Organization's panel on computing in support of battle management, resigned on the ground that the software portion could not be successfully built at least in the next twenty years. In his letter of resignation Parnas said that there were software experts for whom the project offered a source of long-term funding. "During the first sittings of our panel I could see the dollar figures dazzling everyone involved. Almost everyone I know within the military industrial complex sees in the SDI a new 'pot of gold' just waiting to be tapped".

The sheer complexity of the battle management systems makes heavy demands on software experts. Neither component testing nor simulations and small-scale field testing can reveal all serious defects in the software; and realistic testing is not possible because it means full-scale nuclear war. It is estimated that almost 25.61 million lines of error-free computer code would be needed for the system; this is approximately the size of text in

1000 thick books. Experts who design complex software cannot be accused of negligence; the task is inherently difficult and the expectations for technological perfection unreasonably high. Certain programming errors can be detected but the subtlest errors are those which do not take into account certain unforeseen contingencies. These omissions in the programming are compounded by the fact that the software would be based on assumptions about the adversary capabilities and plans which cannot be accurately anticipated. David Parnas does not demand that the software should be perfect; but it has to be trustworthy.

There have been many cases of technical failure of the existing command and control systems. About 125 such incidents involving American nuclear strategic forces, 20 of which were of a serious nature, have been recorded for the period 1945-1976. Operation Prime Target, an exercise conducted in 1977, revealed that American World Wide Military Command and Control System had a failure rate of 62 per cent, the Tactical Air Command reported failures in 70 per cent cases; and the Readiness Command failed in 85 per cent cases. An American Senate report of 1980 noted that the early warning system produced 186 false alerts in a period of 18 months. In June 1980, a failed chip in a microcomputer transmitted an erroneous message of impending Soviet nuclear attack. About 100 B-52 bombers were made ready for take-off. The President's Emergency Aircraft was also alerted. The Senate report of 1980 observed that even though mechanical failure resulted in erroneous information, "the human part correctly evaluated it and prevented any irreconcilable reactions". But the battle management system for Star Wars would rely heavily on computers as human reaction times are simply too slow. Computers will process the raw data from the sensors, detect the missile firings, determine source of the attack, compute the attack trajectories, coordinate the activities of battle stations, aim and fire the weapons, and assess whether the warheads had been destroyed. There is thus the possibility of a computer - generated holocaust.

The ironic effect of uncertainty inherent in an untested and extremely complex battle management system is emphasised by David Parnas when he says that "a weapon you can't trust is of no use to you. *We* will make decision as if it were not there, and *they* will make decisions as if it might work." This would be an unanticipated uncertainty in the strategic equation between the United States and the Soviet Union.

The software specialists are as bitterly divided as the scientists engaged in devising exotic weapons. An organisation called Computer Professionals for Social Responsibility had been formed which seems to be the counter-

part of the Union of Concerned Scientists. Some of the invective in these controversies is the result of speculative opinions about the future course of technologies dressed up in the garb of scientific exactitude. It would, however, be unfair to dismiss these controversies as yet another demonstration of biases and prejudices of scientists and technicians. They reflect the passionate concerns of experts who are cognizant of the possibly calamitous consequences of the future course of technology.

III

It is one of the paradoxes of the nuclear age that defensive measures have extremely offensive connotations. Offensive and defensive technologies and strategies are interwoven in the history of warfare. The stalemate between offensive and defensive capabilities that prevailed for several centuries was terminated by the invention of powerful siege-guns at the end of the 15th century. This dramatic development was the beginning of the military revolution that enabled the European colonial powers to conquer 35 per cent of global territory by 1800 and 84 per cent by 1914. The First World War was launched under the illusion of the superiority of the offensive and was prolonged beyond endurance by the reality of defensive advantage.

The nuclear revolution has resulted in the overwhelming superiority of offensive technologies. The armed forces of the adversary had to be defeated in the past on the battlefield before its civilian population could be slaughtered. Thermonuclear armouries, however, provide capabilities for incinerating millions of people independent of battlefield activity. Superiority of the offensive is overwhelming in the world of nuclear overkill. Mutually assured destruction is an existential reality. The threat of nuclear retaliation has become a substitute for military defence. By ensuring mutual societal vulnerability while protecting retaliatory offensive forces, the nuclear adversaries are in a position to maintain peace. Offensive means are thus made to serve defensive ends.

This realization of the reversal of the commonsensical view of defence came gradually. In the early decades of the nuclear age, the United States and the Soviet Union explored all possible defensive measures. Bombers led to air defence which, in turn, provided the impetus for the development of ballistic missiles. During the 1960s both countries developed technologies of anti-ballistic missile systems which were land-based and emphasised terminal defence shortly before the enemy missiles could reach the targets. American intelligence sources detected an antiballistic missile defence system being developed around Leningrad in the early 1960s.

It was soon dismantled, perhaps because of technical difficulties. A more substantial system was later built around Moscow.

There was an extended strategic debate within the United States in the 1950s and 1960s about the technical feasibility and strategic wisdom of ballistic missile defence. Eminent scientists and civilian strategists participated in this boisterous public debate. The incipient Soviet defensive systems were used by the hawkish elements within the American strategic community to provide appropriate American military responses to the Soviet challenge. This public debate must have had an impact on the Soviet decision-making process with the result that both countries spent billions of dollars and roubles on devising some workable defensive system. Soviet premier, Alexsei Kosygin, declared on February 9, 1967, that a defensive system "is not a cause of the arms race" and added: "Perhaps, an antimissile system is more expensive than an offensive system, but its purpose is not to kill people, but to save human lives." By this time the American administration was having serious doubts regarding the technical feasibility, cost effectiveness and strategic desirability of ballistic missile defence. At the Glassboro summit meeting between Johnson and Kosygin in June 1967 McNamara tried to explain the reasons for American opposition to deployment of defensive systems. He pointed out that the American response to such a Soviet system would be an expansion of offensive forces; and this would inevitably lead to escalation of the arms race.

Robert McNamara himself was under great pressure from supporters of ballistic missile defence. In a major policy speech on September 18, 1967, he explained his reluctance to support deployment of ballistic missile defences against the Soviet Union. American alert forces alone carried "more than 2,200 weapons, each averaging more than the explosive equivalent to one megaton of TNT." Only 400 of these weapons were sufficient to destroy one-third of Soviet population and one-half of Soviet industry. No foreseeable Soviet ballistic missile defence system could negate American capacity for assured destruction and no defensive system could provide an impenetrable shield over the United States. American defences would inevitably lead to an increase in Soviet offensive forces in order to cancel American advantage. It was because of this certainty of a corresponding Soviet response that four Science Advisors to Eisenhower, Kennedy and Johnson and three former Directors of Research and Engineering in the Department of Defence had unanimously recommended against the deployment of ballistic missile defences.

After this powerful argument, McNamara curiously announced his decision to deploy a light antiballistic missile defence system designed to deal

with the Chinese missile threat expected to develop over the next decade. The United States had an "overwhelming first strike capability with respect to China," but there were marginal grounds for concluding that the proposed deployment would be prudent and would provide the "concurrent benefit" of defence of Minuteman sites against the Soviet Union. McNamara thus succumbed to domestic pressure by conceding deployment of light ballistic missile defences against a non-existent Chinese threat.

This decision became a controversial issue in American domestic politics. It was feared that there would be a public outcry from those regions which were not covered by the proposed deployment; but the unexpected happened and the Americans living in some of the areas covered by the proposed defence, like Boston, Chicago and Seattle, became the most vocal critics. They suddenly realized that the proposed defensive installations would become lightning rods attracting Soviet missiles. In 1969, the Nixon administration provided a different rationale for ballistic missile defences. From defence of cities the emphasis shifted to defence of Minuteman silos. It was also suggested that such defences would provide a useful bargaining chip in arms control negotiations with the Soviet Union.

Despite these deployment decisions and shifting rationales, a broad consensus emerged that ballistic missile defences would be technically ineffective, extravagantly expensive and strategically destabilising, and that it would be better if both sides could avoid a dangerous twist to the arms race. Decision makers in the United States and the Soviet Union gradually realized the wisdom of restraint in this particular area and concluded the Anti-Ballistic Missile Treaty of 1972. It permitted two ballistic missiles sites to each country, which were reduced by a protocol of 1974 to one side each, and provided for a system of limitation on the then existing and future defensive technologies. The treaty was thus remarkable for renunciation of certain types of defences which was unprecedented in history. It enhanced the deterrent capacity of the retaliatory forces of both powers by ensuring that their forces would be able to penetrate any missile defence.

This arrangement was made possible because the incremental trade-off between offensive and defensive capabilities made increased defence cheaper than defences to neutralize it. The treaty was of unlimited duration, to be reviewed every five years. It permitted research and development in ballistic missile defences. According to Fred Ikle, the treaty was "meant to seal a Faustian bargain with the devil of nuclear destructiveness." Both the signatories guaranteed "their own destruction on a possible Judgement Day when one side, having been attacked by the other, would want to avenge the attack. Thus Judgement Day would never dawn."

The Outer Space Treaty of 1967 prohibits placing in orbit "any objects carrying nuclear weapons or any other kinds of weapons of mass destruction," and installation of such weapons on celestial bodies or stationing them in outer space in any other manner. The treaty guarantees the freedom of scientific investigation in outer space which, like the high seas, is not subject to national appropriation by any state.

While no weapons have been deployed in outer space, its militarization has been going on for the last 30 years. It has been an integral component of the nuclear arms race to the point that modern warfare cannot be conducted without resort to military systems. Between 1958 and 1983 about 2,114 military payloads were put into orbit by the United States and the Soviet Union. These satellites are designed to increase the effectiveness of terrestrial weapons systems by means of reconnaissance, early warning, command, control and communication, surveillance, navigation and collection of meteorological and geodetic data. They play a vital role in the command and control functions for military forces. About 80 per cent of American military communications are carried out through satellites. A major benign function of the satellites is removal of unnecessary anxieties through early warning systems and verification of the implementation of arms control agreements. The ABM Treaty of 1972 referred specifically to "national technical means of detection" which dispensed with the need for intrusive inspection.

Because of this crucial role, satellites are attractive military targets as well. As they are delicate instruments and travel in predictable orbits, for long periods of time, they are especially vulnerable to attack.

The United States was the first country to conduct an anti-satellite test on October 13, 1959; its military space programme was conducted in secrecy. On March 23, 1962, a "blackout" directive was issued which remained in force till 1978. A series of Soviet anti-satellite tests began in 1968, ceased abruptly in 1971 and were only resumed in 1976. This indicates a low priority for the project and may also be the result of a combination of budgetary and political constraints and technical difficulties.

There is a technical overlap between ballistic missile defence and anti-satellite weapons. Ballistic missile defence poses a much greater technical challenge; but advances in anti-satellite technology may incrementally augment ballistic missile defence. The absence of legal restraints on the development of anti-satellite technology can therefore be used to further ballistic missile defences. The Soviet Union has tabled a draft treaty to plug this loophole.

In the European historical experience vulnerability to attack is a normal state of affairs. It used to be said that a European was someone whose country had been occupied by foreigners at some point of time or the other. This historical experience has led to the conclusion that security is basically obtained through diplomacy and not through military superiority. The reaction of the European NATO countries to the ballistic missile defence controversy within the United States in the earlier decades of the nuclear age was one of anxious irritation with reference to American search for total security. They were afraid of the United States insulating itself from the fortunes of her European allies once such defences could be deployed. The British and the French especially worried about the effectiveness of their strategic missile forces in the context of Soviet and American ballistic missile defence systems. The ABM Treaty of 1972 removed these anxieties and prolonged the life of the British and French nuclear deterrents. President Reagan's Strategic Defence Initiative once again threatened the "solidarity of shared risks" on which the alliance is based.

The West Europeans have always been conscious of the limitations to Soviet power. Michael Howard has pointed out "the curious phenomenon that the countries most directly threatened by Soviet military power, West Germany and France, are the most confident of their ability to handle the Soviet Union through the normal machinery of diplomatic and political intercourse, while for the most remote, the most powerful and the least threatened of the allies, the United States, the Soviet Union still bulks as a figure of almost cosmic evil with which no dialogue is possible."

Faced with peace movements within their own countries, the West European governments find it necessary to maintain an arms control dialogue with the Soviet Union. Their initial reaction to Reagan's speech of 1983 was one of disbelief followed by anxiety regarding its impact on arms control and East-West relations in general. An additional factor was the possible impact of the Strategic Defence Initiative on the nuclear forces on whose modernization and expansion Britain and France have spent enormous human and material resources during the last few years. The West Europeans were not unmindful of yet another American attempt to reestablish political, economic and technological ascendancy in the garb of security concerns.

The Reagan administration needed West European support in order to nullify Congressional opposition to Star Wars funding. The British Prime Minister Margaret Thatcher presented to Reagan at Camp David in December 1984 the West European consensus as reflected in her four points. The aim of the project should not be achievement of military superiority. Future deployments under the project would have to be a matter of

negotiations keeping in view the existing treaty obligations. The overall aim should be to enhance deterrence. And East-West negotiations should try to achieve security with reduced levels of offensive systems on both sides. Sir Geoffrey Howe, the British Foreign Secretary, warned on March 15, 1985: "We must take care that political decisions are not preempted by the march of technology, still less by premature attempts to predict the route of the march". Despite these misgivings, the West European governments were willing to accept the Strategic Defence Initiative as a research programme tightly circumscribed by the ABM Treaty and the offence-dominant regime of nuclear deterrence.

IV

One argument in favour of the project is that the research and development phase itself would generate substantial technological innovations eventually culminating in the scientific and technological ascendency of countries participating in it. State-sponsored perpetual technological revolution is a distinctive feature of the contemporary era. "Advanced technology", says Michael Howard, "makes possible advanced weapons, and the search for more effective weapons feeds back to advanced technology". The United States and her allies have reached a stage when a programme like Star Wars can be justified as a vehicle for promoting technological rejuvenation. It is suggested that research and development on the frontiers of knowledge would result in a radical transformation of the scientific and technological base of these societies. Dedication to the principle of free enterprise does not allow American Governments to intervene substantially in the strategies of private industries, as most other governments do. It is through defence research, development and procurement policies that American administrations redirect innovation and industrial growth; concern for national security can bring about a consensus on an issue which would otherwise lead to acrimonious debate.

Faced with the European anxieties about the strategic wisdom of the programme, its supporters began to emphasize its research and development aspect leading to substantial civilian spin-off. As the program includes an extensive exploratory element, the civilian spin-off is likely to be greater than from other military programmes geared to specific weapon systems. Many of the technologies involved, high-powered lasers and computer programming for instance, are of a generic nature which may have a variety of civilian applications. The programme, in other words, was supposed to be the harbinger of a technological revolution. Afraid of being left out of this technological bonanza, West European governments and firms began to search for ways of getting on the bandwagon. The American govern-

ment needed the support of her NATO allies in this endeavour for reasons of alliance cohesion and in order to strengthen its position against its domestic critics.

Faced with continued hesitation on the part of West European governments, the American promoters of the programme resorted to a shrewd dangling of the carrot of participation in research and development, thereby hoping to circumvent West European governments by roping in industrial firms and research laboratories of Western Europe. Many of these firms considered themselves to be in a good bargaining position when it came to certain specific areas of high technology. Their main anxiety was reinforced by the previous experience of American administrations' natural preference for American firms while awarding major contracts and the experience of the application of the legislative and executive weapons in the American protectionist arsenal. "The Reagan administration has told us", said a senior French official, "that this high powered technological train is leaving the station, and we had better be on it. But what they don't realise is that Britain and Germany won't be in the front of the train, or even in the middle. They'll be lucky if they wind up in the baggage car. "This reflected an anxiety that the Americans could play European firms against each other.

There are several factors which restrict the level of European participation in Star Wars research effort. John Pike, Associate Director for Space Policy of the Federation of American Scientists, enumerated some of these at a Congressional hearing in December 1985. The Anti-Ballistic Missile Treaty of 1972 prohibits the transfer to other states of anti-ballistic missile systems and their components. Almost half of the Star Wars programme consists of work on precisely such technologies. The United States has spent over \$ 150 billion spread over 30 years on these technologies; European firms would be at a tremendous disadvantage in relation to this major portion of the programme. They might obtain contracts worth \$ 30 million in the near future and a maximum of \$ 300 million over a longer period.

Moreover, the commercial potential of some of the technologies developed would be limited. The computers to be developed must withstand the effects of nuclear explosions. "But banks and insurance companies don't need computers that can continue working during World War III," said John Pike. Directed - energy systems may also have industrial and medical use; unlike those for Star Wars, such systems for civilian use would require extremely small power outputs. X-ray lasers could be used in medical research, but "no hospital or factory is going to detonate atomic bombs in its basement on a regular basis".

Despite these misgivings, Britain, West Germany, Italy, Japan and Israel have entered into agreements with the United States for participation in the project. The British experience has so far been disappointing. The American government flatly turned down a British proposal that between one to two billion dollars should be allocated to research in Britain. By June 1986 only seven contracts worth \$ 1.2 million had been signed. "It's only pennies from heaven for British firms", complained the *Sunday Times* of London. The West German firms are concerned about patents and technology transfers and expect a guarantee of fair exchange and equal partnership. The militarist circles in that country are exploring a technological framework for a more prominent role for their country at the global military level. The Japanese government signed an agreement in July 1987 after considerable exploratory work which included visits by Japanese teams to American research facilities. The Japanese companies are advanced in technologies for sensors, signal processors, miniature components, materials and software, especially artificial intelligence software. Japan has thus the necessary technological base; the American armed forces have already become dependent on Japanese supplies of cheap and reliable electronic hardware. The French government, reluctant to participate officially, would not stand in the way of French firms obtaining lucrative contracts.

There is at the same time a pervasive anxiety in all these countries that participation in an American military research programme may drag them into a web of security - related restrictions and entanglements which may adversely affect their technological growth. These restrictions on the civilian applications of military research would hamper trade and technology transfers with socialist countries. In 1985, for instance, the Coordinating Committee for Multilateral Export Controls, an informal arrangement involving the United States, its NATO partners and Japan for coordinating their export controls to socialist countries, accepted a new list of "dual-use" technologies including high speed computers, robotic technology and a wide range of new materials. For countries highly dependent on exports, the expanding American protectionism could have serious consequences for their domestic stability and peace.

It has to be remembered that detente in Europe was partly a response to intensified competition between the United States and her West European allies for new markets and fields for investments. The exports controls based on these security considerations cost American exports approximately \$ 16 billion every year. At a time of record American budget and trade deficits, these export restrictions would further intensify tensions between the United States and her allies. Reflecting on this possibility, an American expert has complained that "our economic competitors will be eating our lunch".

Military research and development is distorting American technological development by subordinating it to the dictates of the military sector. The increasing cost and complexity of the weapons systems is making military technology increasingly remote from the civilian sector. The absence of the civilian sector from the top ten major American companies involved in Star Wars research is a reflection of the separation of civilian and military technologies. Thus the argument for Star Wars on grounds of its supposed catalytic effect on the entire spectrum of science and technology is difficult to substantiate. Even if some spin-off does take place, the opportunity costs are tremendous; it has been estimated that civilian spin-offs through military research and development cost ten times more than through direct investment in civilian research enterprises. With the passage of time, swords look less and less like ploughshares.

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Indo-Pak Relations -- A Review : Measures to Reduce Tension and Normalise Relations

MAJOR SATISH CHANDRAN 1/5 GR (FF)*

AIM

The aim of the paper is to analyse the possibility of a settlement between India and Pakistan, keeping the current geopolitical situation in the world at large and the subcontinent in particular in mind and suggest measures which could be initiated to normalise Indo-Pak relations.

PREVIEW

The paper has been laid out in the following parts:-

- (a) *Part I.* Analysis of the existing geopolitical situation in the sub-continent.
- (b) *Part II.* Measures to normalise relations.
- (c) *Part III.* Summary of recommendations.

GEOPOLITICAL SITUATION IN THE SUBCONTINENT

Before we try to evolve a strategy to normalise Indo-Pak relations, a brief study of the geopolitical situation in the subcontinent and relations between India, Pakistan and the Islamic world is considered essential to analyse Indo-Pak relations in the correct perspective. Three relevant tenets need to be analysed and understood by us to evolve a cogent strategy in dealing with Pakistan. These three facets have a great bearing on deciding policy parameters between India and Pakistan. They are :-

- (a) Pakistan and the Islamic World.
- (b) Pakistani strategy in dealing with India.
- (c) Indo-Pak relations.

Pakistan has of late been trying to wean away from South Asia towards

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South West Asia, trying to capitalise on the Islamic card. However geo-political and geostrategic realities cannot be wished away this way. In the historical perspective Pakistan has closer ties with India than countries of South West Asia. This has to be kept in mind always.

PAKISTAN AND THE ISLAMIC WORLD

One can safely comment that the Islamic World is presently trying to foster unity and emerge as a major power block in the international sphere. This is a process which was set in motion long back. The operative element in this game is that the Islamic world itself is beset with contradictory leanings. There may be an element of mutual 'felt needs', but the element of unified stand against any third country is a very remote possibility.

It may surprise many to learn that there was considerable opposition from the members of the Arab league to the formation of Pakistan in 1947. This is due to the parallel drawn between Israel and Pakistan. After all, these are the only two states which have been created on the basis of religious identity. Many draw parallels between the Zionist and Pakistan movements and Zionism is definitely anathema to the Arabs.

Building on this, India has had deeper and more stable relations, with the members of the Arab League. Right from the time of formation of NAM, India's relations with the nationalist Arab countries have been cordial and congenial. Opposed to this, Pakistan has got enmeshed in various Pro-Western alliances (like SEATO and the Baghdad pact) which are again anathema to the Arab World. India's stance on various contentious issues relating to West Asia has also shown considerable consistency. Thus we see that we have cultivated a friendly environment among the Islamic world, and hence it would not be difficult to counter any likely Pakistani moves and clamour for support among the Islamic world. The results of Prime Minister Benazir Bhutto's whirlwind tour of the Islamic countries in May 1990, bears testimony to this analysis. Pro Pakistan statements have not been forthcoming even from Jordan and Turkey, the staunchest diplomatic allies of Pakistan.

PAKISTANI STRATEGY

Pakistan has followed an avowedly anti Indian stance throughout its existence. On the international plane it has paid scant attention to international treaties. It is notable for dishonouring treaties, it has voluntarily signed. Violation of the standstill agreement it signed with the ruler of J&K,

non adherence of the tenets of 1948 UN resolution, the Siachin issue in violation of the 1949 Karachi agreement, SEATO/CENTO membership, US-Pakistan security treaty and the Geneva accords with Afghanistan are some of the notable examples of such violation. Successive regimes in Pakistan have thrived on a popular mandate of anti India sentiments and rhetoric. This is the first issue which needs to be addressed in resolving to find any long term solutions to the Indo-Pak imbroglio.

Prime Minister Benazir Bhutto's volte face on Kashmir is an abject lesson in accepting compromise solutions in the wake of threats to political existence. The honourable Prime Minister had opposed Late Zia's Kashmir policy tooth and nail while at London and later at home after her election. The degree of interference in Indian affairs had been considerably reduced as a result of the replacement of the chief of ISI. However, the famous vote of confidence which she won by a razor thin margin in Nov 1989 changed all that. It is common knowledge that she has had to bank on the Military and the President for support in continuing as the Prime Minister. The end result is that she is more vociferous a supporter of the Zia doctrine now than the original exponents. Thus we see that political expediency and self survival have occupied a major place in Pakistani, strategy vis-a-vis India. Military does hold sway in decision making and hence any change in Pakistan on Kashmir has to have deep rooted, coercive origins. We must strive to change the thinking in Pakistan on Kashmir.

There are two aspects of Pakistani policy which have shown an amazing degree of consistency. Firstly, Pakistan has always strived not to push India beyond a point. The Zia trip to Jaipur and cricket diplomacy can be seen as an example of this. Pakistan stands to gain in fermenting trouble in pockets of India and can keep Indian population on tender hooks. This needs correction. The second aspect is that the Pakistan military leadership and political elite have a short lived memory; Lessons of 1965 were forgotten too soon and they had to pay the price in 1971. However, we must aim to deliver this message without actual confrontation at regular intervals. Pakistan needs to be reminded that any conflict will effect and harm Pakistan more than us and history repudiates this claim.

INDO-PAK RELATIONS

Pakistan has always treated India with suspicion. The relations between the two countries have never been cordial. It may not be out of place to quote from Jinnah's speech on Jan 23, 1948 while launching the H.P.M.S Dilawar (Sword) Pakistan's first modern destroyer. "The destruction caused by the first world war pales into insignificance as compared to the dev-

astation and havoc resulting from the last world war and now with the discovery of the Atom Bomb, one shudders to think of the pattern of future wars. Pakistan must be prepared for all eventualities and dangers. The weak and the defenceless, in this imperfect world, invite aggression from others. Pakistan is still in its infancy and so is its Navy. But this infant means to grow up and God willing will grow up much sooner than many people think. You will have to make up for the smallness of your size by your courage and selfless devotion to duty for it is not life that matters but the courage, fortitude and determination you bring to it".

This sentiment epitomises Pak Psychology. Mistrust for the big brother notwithstanding, Pakistan has never learnt to accept India's intentions with grace and confidence. Therein lies the roots of all the problem. The drubbing Pakistan has received in 1971 has added insult to injury.

One hoped that the genetic nature of the conflict would be erased with the passage of time and the generation born a decade after Independence would be more congenial in its approach to India. Alas, this was not to be. Pakistan has managed to keep the issue absolutely fresh and alive. Every child growing up in Pakistan is being fed with Anti Indian literature with the result that the present generation is growing up in an absolutely anti Indian mould. Coupled with this state of suspicion, both are covertly vying to acquire the "Prima donna" status in the sub continent. This is a legitimate competition and need not worry any one. However, steps have to be initiated to bring India and Pakistan closer to each other and if need be even exist on a mutual tolerance basis.

MEASURES TO NORMALISE RELATIONS

Having analysed the existing environment in the subcontinent and Indo-Pak relations, let us progress towards trying to evolve a strategy to normalise Indo-Pak Relations.

As has been brought out elsewhere, this has to be a multipronged thrust. The issue can broadly be categorised as falling into the following heads:-

- (a) Political
- (b) Diplomatic
- (c) Military

POLITICAL MEASURES

Measures initiated at the political level have to cover the entire gamut of both internal and external political initiatives. International relations are

basically dependant on political equations. Though there are no permanent friends when it comes to international relations, there needs to a certain degree of permanence in policies. This of course exists. However, the same may not be true for domestic policies. It is time we think on lending some degree of permanence to our domestic policies also. Political expediency and individual ambition needs to occupy a back seat and our political leadership will have to turn more nationalist in approach. Knee jerk reactions have to be avoided at all costs if we are not to embark on costly misadventures.

National Consensus. The first and foremost requirement is to evolve measures to initiate steps to arrive at National consensus on important matters of National Security. There has to be considerable exchange of ideas between members of all strata of society. There is no substitute to informed public opinion. The masses have to be made aware of the truth and the principled stand of the Government. No stone should be left unturned in enhancing the confidence of the masses vis-a-vis national security aspects. Fortunately considerable debate is presently going on in the country on National Security. The fact that National Security is not restricted only to matters military is being clearly understood. The formation of the National Security Council is a welcome step. However, it needs to be ensured that this body is not consigned to bureaucratic oblivion. It may be a good idea to draw on the expertise of some of our eminent retired Senior Defence personnel while formulating national doctrines. There is a dire necessity to formulate cogent long term doctrines and enforce their implementation. Sub-national and fissiparous tendencies have to be subjugated to national causes. The sheer size of our country may make this task sound stupendous. Well, we have a history of being able to arouse masses on many issues. Various movements during the independence struggle, Bhoodan movement, JP's movement against declaration of internal emergency etc are but a few examples. A start has to be made at the Prime Ministerial level and by a conscious process of truthful dissemination of information, we must call the bluff on Pakistan's stand on the Kashmir issue. It may not be an overstatement to say that even the intelligentsia in Southern and Eastern Segments of India may not be aware of what actually happened in J&K during the fateful months of 1948, what the UN resolution is all about etc. This degree of lack of information can lead to mistaken analysis and lack of interest. This has to be corrected by a concerted drive. We have seen in the recent past that some political parties have been indulging in bold rhetoric like bombing terrorist camps etc. Now this sort of unpractical idea needs to be stopped from being voiced in the first place. A politico-moral line has to be chalked out and Pakistan singled out for information influx in India. Externally, India must continue to voice its rightful indignation

at Pakistan's meddling in our internal matters. It is well known that Pakistan loses no opportunity to espouse its cause and it uses all available fora to do this. India must effectively counter them.

Counter Propaganda. There has to be a conscious effort to effectively counter each item of Pakistan propaganda. With a view to achieve this a specific body has to be formed at the central cabinet level to monitor false propaganda and issue rejoinders. False propaganda if not countered in time, tends to get the cement of legitimacy and credence. Hence countering of false propaganda at the highest level is a must. Couple of statements by political leaders may not suffice. It has to be an item by item dismantling process. From our experience in Sri Lanka, considerable disrepute has befallen our country due to sheer lack of counter propaganda.

Confidence Building Measures. Certain steps have been initiated in this field recently and are likely to be on the agenda of Indo-Pak talks. However, we need to go about this matter in right earnest. A prime pre-requisite to this step is to carefully chalk out a strategy. One classic example where India erred is in the verbal agreement reached between Zia and Rajiv aimed at not striking each others nuclear installations. By this tacit acceptance, the world, willy nilly was made to believe the existence of nuclear parity between India and Pakistan. This runs counter to our stand all along and this sort of gaffe has to be avoided at all costs; and this can only be done if we have permanence, continuity and commitment in our policy planning bodies charged with the responsibility of dealing with neighbouring countries.

Strategic Consensus. This is an area where we may like to learn from our adversaries. It is well known that Pakistan does not have the resources to match India's military build up. Hence Pakistan had gone in for clear-cut policies on military spending. Judging by military balance 1986-89, India has a 21 : 17 advantage. Two relative weak points of Pakistan are armour strength and combat aircraft. Pakistan has negated this disadvantage by the nuclear umbrella. This gives them the leverage to proceed at the pace dictated by them in the field of modernisation. China too follows a similar path. We need to derive lessons and probably go in for a nuclear and missile shield prior to embarking on developments in other fields. We have made a start in this line. But the element of strategic consensus is lacking. Discussions and dissent from various quarters notwithstanding, we must strive to formulate strategic consensus on various issues, disseminate them and amalgamate these in the various policy planning parameters during the formulation of five year plans, allocation of funds for defence budget etc. People have to be encouraged to participate in the public debate leading

to the formulation of strategic consensus on various issues. Time has come for us to remove the veil of secrecy which surrounds our seminars on national policy issues. People's participation is a must. Justification of the defence expenditure needs to percolate down to the masses. This will considerably enhance the credibility of the defence forces also, which in itself is a great gain. Information dissemination on defence matters has to be stepped up.

Constitution of a Body to Advise the Prime Minister. President Gorbachev's model is worth analysis. One single individual has reformed a system which had taken very deep roots. He has systematically dismantled the huge military machine in Eastern Europe and rendered the NATO and WARSAW pacts redundant. He has also encouraged political dissent in the USSR. He has thrown open the boundaries of the Soviet Union to the rest of the world. As a fitting finale he has recommended far reaching economic reforms within the USSR. Though stalled at the time this piece is being written, he is definite to get it through.

The most amazing part is that all this has occurred in a fairly short period of time. From the time of his Vladivostok speech to 1990, is rather a short period. It is my considered opinion that Gorbachev could not have achieved all this without able, direct, uninhibited and critical advice. From reports, it can be discerned that Gorbachev has collected around himself some very able advisors, men with proven antecedents for competence. Yakovlev, Sheverdnadze, Dobrynin, Sagdeev, Velikov and a host of others who do not mince words. It is to Gorbachev's eternal credit that Sagdeev could denounce the entire manned space programme and yet remain Gorbachev's confidante. Does this ring a bell? We may consider thinking in terms of having an advisory body of talented men around our own Prime Minister. The country does not lack talent. We only have to address our conscience and be prepared to accept unpleasant truths. I feel there is a definite need to constitute a body to render uninhibited advice to our Prime Minister. Men with proven nationalist fervour, commitment, talent and courage of conviction, are not hard to come by. We only need to mobilise them.

Gorbachev's reforms are likely to heap rich economic dividends for the USSR. Our need today amounts to the same. We need to devise means to economise on areas of unproductive spending. The defence budget qualifies as one possible area. But we need to negate counter forces in terms of unfair military force structure vis-a-vis Pakistan before we can even dream of any reduction in defence spending. We have to take the dynamic model of Gorbachev, modify it to suit our conditions and take unilateral steps. A committed advisory body will go a long way in helping to evolve a plausible and lasting solution.

DIPLOMATIC MEASURES

This is a major tenet of international relations. Our diplomatic corps needs to be complimented if not congratulated for their role in garnering fair amount of support during the recent flare up in Indo-Pak relations. After the major diplomatic success prior to the 1971 war, this is one occasion when international opinion was clearly in favour of our policies. This helped in a large measure to temper the response and reactions of Pakistan. This clearly shows that our diplomatic corps had done its home work. The pressure has to be relentlessly kept up.

Foreign Policy. Style and substance are both important when dealing with emotion charged issues and influencing public opinion. The receding of the cold war will result in ascendancy in the importance of international public opinion. Basis of public opinion is moral judgement. Hence in the years to come, moral basis is an aspect which cannot be discounted while framing national policies. We will have to create a conducive climate in the international arena to build positive and supportive international public opinion. Our strategy should aim at full scale and forceful foreign policy initiative and diplomatic measures to tilt international opinion in our favour.

Kashmir is an emotive issue but only for the populace of India and Pakistan. The international community is not effected by the emotions involved in developments in Kashmir. We must realise this and capitalise on the lack of ground knowledge of the international community. Our foreign policy must be suitably doctored to galvanise support for our stand on Kashmir. If need be, certain amount of give and take vis-a-vis other similar issues will have to be accepted. As a start we may have to revitalise our anti-Israel stand on occupied west bank and Gaza strip. Similar specific areas may have to be identified and dealt with in detail.

Kashmir Issue. The ground realities of the Kashmir issue have long been forgotten. The international community has to be reminded of the provisions of the UN resolution and the tenets of the Shimla agreement. The Pakistan stand does not meet the test of legal and moral scrutiny. We must continuously harp on this. There can be no compromise on the withdrawal of troops from POK. It has got to be convincingly put across to the leaders of all countries. Pakistan has also got to stop abetting terrorists and dismantle the training camps, in Pakistan. This is an issue which our diplomats have to work on to have world leaders exert pressure on Pakistan. India might be able to stand up to USA on Super 301, but Pakistan will have to think twice before disregarding external pressure. This is one lever we have to liberally control and exert pressure to make Pakistan accept

our stand point. At the diplomatic level, very deft handling would be required to ensure this, and our diplomatic corps will have to work out a cogent strategy for this.

NAM and SAARC. We are senior partners in these bodies. Time and again we see Pakistan flouting the charter of these bodies in that they raise bilateral issues at various meetings of these bodies. This often goes uncountered immediately. Though repudiatory statements are issued later, it may be necessary for our representatives to be on guard always and issue immediate rejoinders. This will have to be done by members of our diplomatic corps.

MILITARY MEASURES

Measures undertaken by the military have to be within the frame work of national policy. The defence forces have to continuously strive to send clear signals to own populace regarding their preparedness for safeguarding the interests of the nation. As far as external signals are concerned, we must strive to convince our neighbour of our honourable intentions. Pakistan is probably at an advantage vis-a-vis India in this field in that the army holds considerable sway in decision making in Pakistan. The Pakistan Army can be more vocal in airing their views. The perceptions of our commanders do not reach the public. This gap may require narrowing to enhance the credibility of our doctrines. There are certain measures which can be contemplated at the military level as enumerated in the following paragraphs.

Shift in Strategy. For over four decades we have followed a "reactive strategy" leading to an element of "defensive mind set", being formed among the hierarchy of our army. In all the sand models, exercises etc, Red Land has always been on the offensive and our plans have revolved around stymying the offensive and launching the counter offensive which of course succeeded. This strategy has a major drawback in that the full weight of our combat potential is not exercised ab-initio and the "guessing game" continues very late into the evening. Resources built up at considerable expenditure to the exchequer may remain uncommitted as it happened in 1971. Super power influences in the decision making corridors of the capitals of South Asian countries is not a thing of the past. Political rhetoric notwithstanding, we must be alive to the fact that we are subject to mid course coercion during conflict. Hence there is a case to redefine our strategy and emphasise on a "pre-emptive" or "punitive" element in our strategic thinking. Detractors might draw parallels between the Chinese misadventure into Vietnam and its results and our plans on punitive measures in

dealings with Pakistan. However one should not forget that the onus and leverage has always rested with China - Vietnam has never indulged in military inexpediency vis-a-vis China like Pakistan has done with us. This proves that an overt punitive leaning in the strategic thinking works in keeping smaller neighbours with bellicose intentions quiet. If this aim can be achieved I would surmise that half our problem would resolve itself.

This is not to suggest that we maintain an offensive and belligerent posture. What we have done since 1971, is to arm ourselves to a degree to suggest that any misadventure on the side of Pakistan will hurt Pakistan in the long run. This, to quote former Army Chief General Sunderji, has worked, and discouraged Pakistan from trying anything. But Pakistan has successfully circumvented this psychological superiority by tying us down with its covert involvement in Kashmir. Details of "OP TOPAC" is common knowledge now. We have to regain moral and psychological ascendancy and that could be achieved by sending discreet signals to Pakistan on the shift in our policy. This will have to be done within international moral circumference in that international public opinion will have to be garnered if not in support but definitely to follow a "closed eye" policy. This should not be difficult if we consider that details of US approach in their dealings with Pakistan and Israel and the consummate ease with which USA has circumvented established norms and rules on the nuclear issue. Thus two aspects must form the mainstay of our dealings vis-a-vis Pakistan.

- (a) We enjoy qualitative superiority and would not hesitate to use it if any threat to our national integrity, interests or affairs manifests itself.
- (b) Internal problems of both countries must not be internationalised. A clear "hands off" policy has to be implemented and is in the best interest of both countries.

Existence of Strategic Depth. One major misnomer that has to be dispelled in the minds of the populace of both countries is that Pakistan has no depth vis-a-vis India and hence is always on an offensive mode. This aspect requires detailed analysis. Even after "Zarbe Momin" the Pakistan COAS is on record having stated that Pakistan has to follow a strategy of "offensive defence" as it lacks depth vis-a-vis India. There can be no statement farther from the truth as this. Strategic depth is in relation to major objectives which are within achievable depth in an adversary's territory. Pakistan cannot obviously be planning to march into Lucknow and Hyderabad but would to all military logic be planning on strategic objectives in J&K, Punjab and Rajasthan in their appreciation for conflict. This would throw up a line of objectives in these states which would be important.

India obviously cannot plan on losing these high value targets, and hence India's geographic extent is of no consequence while evaluating strategic depth. This puts the logic for an "offensive defence strategy" of Pakistan in very poor footing and we must make deliberate efforts to call the bluff and inform our countrymen on the lack of rationale behind Pakistan's basis theorising in evolving military strategy. It would thus be possible to have the nation in a receptive mood and frame of mind when it comes to accepting any crunch in aid of defence.

Policy, Strategy/Doctrine Dissemination Cell. As brought out elsewhere in the paper, the degree of exchange on military matters among the general population is very low. This is due to lack of knowledge. At present there is no system by which important matters on national strategy are disseminated to the people. Tactical doctrines suffer the same plight. There is a distinct need to inform the masses the thought process and the rationale behind various actions contemplated at the Service Headquarters level. This can best be done by forming a dedicated cell charged with the responsibility of disseminating information of relevance. This of course has to be done within the constraints of security. Only information which is of no security value need be disseminated. The cell so constituted will have to be given considerable leeway to interact with the fourth estate.

This step will also go a long way in avoiding the scandals related to defence purchases. Inflow of information to the population will set their minds at rest and people will be convinced that the tax payer's money is not being squandered. This will prevent skeletons being drawn out of the cupboards at subsequent stages.

This cell can form part of the Perspective Planning Directorates at the Service Headquarters. The increase in infrastructure can thus be marginalised. It is time we think in terms of more information exchange on defence matters among the general public of the country.

Security Belt. This is a concept fast gaining currency. It may well be prudent instituting a security belt of 5-10 Kms of the border with Pakistan. The problem is that the porosity of the Indo-Pak border is of considerable magnitude. To effect any meaningful non-interference in each others affairs, we must prevent clandestine transborder move. This can be effected only by limiting the porosity of the border. A viable proposal which has been voiced in the print media is to mine the borders. The proposal merits consideration and if carried out, would result in considerable advantages. This can safely be classified as a politico-military solution. Hence the proposal is being analysed in greater detail.

Concept. The concept would envisage laying anti personnel mines (preferably directional) all along the border and declaring an area approx 5-10 Kms on own side of the border as a high security restricted area. True, this might hinder farmers who are presently cultivating land right upto the border. But this can be circumvented by issuing identity cards and security passes for move during day as is being done in many areas presently. Coupled with this the local civil administration has to effectively co-operate with the military and para military commanders on the spot. A scheme to impose dusk to dawn curfew may also be considered. Some amount of leeway may have to be given to para military forces functioning in this area to conduct searches and effectively deal with anti-national elements.

Advantages. The Advantages which accrue from this step are multifarious. Some of these may merit mention.

(a) *Deterrence.* Mines require consummate skill to deactivate. If the area is patrolled intermittently chances of deactivation of mines are remote. Hence the step will have tremendous deterrence value against any possible designs of anti social elements to move through the area.

(b) *Economic Gains.* The quantum of para military forces deployed along the border presently is stupendous. It may be possible to effect reduction in this force, or utilise this force for other duties elsewhere in the country thereby effecting some saving on the crores spent on the up-keep of these forces.

(c) *Improvement in Quality of Life of Men in Uniform.* The nature of task assigned to troops employed along the border places very high demands on them, and has concomitant impact on the quality of life of these men. This step will help in employing these men on a more concentrated mode as against the present mode wherein troops are strewn around in very small groups along great distances. We will be able to provide more meaningful amenities if the men are concentrated. We owe this to the custodians of our borders. Let us try and improve the quality of life of these men. The step enumerated will definitely go a long way in achieving this aim.

(d) *Security of Defence Fortifications.* We are aware that in the garb of agriculturists and farmers a large number of agents may be working along our borders. These agents can pass on very vital information to our adversaries on our defence fortifications. We can effectively prevent this by minimising movement around these areas by restrictions imposed in the security belt.

(e) *Preparation during 'Warning' Period.* The minelaying along borders is done presently on the eve of any likely war. This poses heavy strains on resources during the build up to a war. We can avoid this strain on men and equipment if these mines are emplaced earlier. Of course the existing mines will have to be superimposed with fresh ones for tactical considerations. This can be done during the warning period.

From the foregoing, we see that the constitution of the Security belt will give considerable degree of advantage to the nation on all fields of border activity and civic action. Hence this proposal merits further consideration, analysis, and speedy implementation.

TIME SCHEDULE FOR IMPLEMENTATION OF STRATEGY

Measures enunciated above fall within the ambit of both long term and short term measures. Many of the political and diplomatic measures are of a continuous nature. Adequate impetus must be given to ensure the continuity of policies. Certain short term and immediate measures also need to be initiated at the earliest to help us tide over the present crisis, and state of impasse in Indo-Pak relations. All the military measures enunciated fall within this frame work. There is an immediate requirement of demarcating the security belt and certain hard decisions have to be taken by the Government. Mining the entire stretch of the border is one of them. The shift in strategic perspective also has to be effected as early as possible. Talks need to be initiated at appropriate levels where some plain talking has to be done. James Baker's outburst at the Israeli delegates on 18 June is a classic example of a man otherwise known for his cool composure forcing the issue. Our diplomats may well imbibe such lessons.

As far as other political and diplomatic measures are concerned, a fixed time schedule has to be chalked out. We must try and adhere to this schedule and force the pace if need be. A state of flux and inaction has gone on far too long and has started eating into the edifice of our national existence. This needs to be corrected.

SUMMARY OF RECOMMENDATIONS

Measures to normalise relations between India and Pakistan have been categorised under political, diplomatic and military initiatives. These are briefly summarised in the following paras.

POLITICAL MEASURES

(a) *National Consensus.* The importance of forging a national consensus cannot be overstated. National Security must come much higher in the list of priorities of our political parties. All efforts must be made to evolve a strategy based on national consensus on this contentious issue and the relevant aspects must filter down to the masses. The initiative has to emanate at the top level of Parliament.

(b) *Counter Propaganda.* India must counter false propaganda by Pakistan item by item. We may have to form a separate body to do this after careful research and considerable home work.

(c) *Confidence Building Measures.* Since India and Pakistan do not share common perceptions on Indo-Pak relations, we have to initiate unilateral action as enumerated.

(d) *Strategic Consensus.* This is closely related to policy formulation. We must arrive at a well thought out strategy and have consensus opinion on these issues. This strategy will then have to be given sound diplomatic and financial backing to succeed.

(e) *Body to Advise the Prime Minister.* We have to have a dedicated body of nationalists to advise our Prime Minister on various key issues. The body has to be constituted based on merit. Sycophancy must be rooted out.

Diplomatic Measures. This is an on going process, and needs to be given adequate impetus at intervals.

(a) *Foreign Policy.* Full scale and forceful foreign policy initiatives must be launched and relentless pressure kept up to counter Pakistani propaganda and tilt international opinion in our favour.

(b) *Kashmir Issue.* The basics of the issue must not be forgotten. Our diplomatic corps must remind the world leaders the relevance of the UN resolution, tenets of the Shimla accord etc periodically.

(c) *NAM and SAARC.* Bilateral issues if raised by Pakistan in these fora must be countered immediately. We must not allow Pakistan to gain an edge on any issue.

MILITARY MEASURES

- (a) *Strategic Thinking.* We must infuse an offensive and punitive element in our strategic thinking. We must strive to gain our place in the subcontinent if need be, by occasionally flexing our muscles. Qualitative superiority of our armed forces and the existence of national will must be stressed always.
- (b) *Strategic Depth.* The misnomer on existence of strategic depth must be dispelled. The ground reality on unacceptable nature of loss of territory and the flaw in basic Pakistan Military theorizing must be explained to the masses.
- (c) *Doctrine Dissemination Cell.* We must have a body to disseminate our doctrinal stand point. The public has to be made aware of our national strategy and the rationale behind military actions. We need a dedicated body to do this at the service Headquarters level.
- (d) *Security Belt.* This aspect has been analysed in detail. We must declare a convenient security belt along our borders at the earliest and take actions to prevent the violation of our borders by Pak trained miscreants.

Time Schedule. The cauldron is boiling. We need to take some hard decisions and expedite some actions. While diplomatic and political measures are a continuous and long drawn out process certain expeditious military action has to be taken to bring about a rapprochement.

CONCLUSION

It is conclusively evident that all is not well in Indo-Pak relations. The genetically programmed conflict has been stretched too far. It is time that we in the subcontinent take a hard look at realities and sit across the table to sort out our differences. We are presently mere pawns in super power politics. With the super powers embarking on a course of rapprochement, do we need to maintain our aggressive postures? The posture has already led to three wars and another round is imminent. Another round will put all developmental programmes in both countries back by couple of decades and hence has to be avoided at all costs.

It is possible for both India and Pakistan to iron out differences. Steps initiated will have to be populist in nature to convince the masses on both sides of the genuineness of the approach. Political expediency is a major parameter. However it is my fervent belief that we can embark on a course

of rapproachment. Sincere efforts will have to be initiated. As suggested earlier, being the "big brother" we must take the initiative. Military initiative presently rests with us. We could think on capitalising on this. We need to wrest political initiative from Pakistan totally.

The gains from a rapproachment between India and Pakistan are likely to be stupendous. Economically both the countries will gain in great measure. Both India and Pakistan can march into 21st century with full force on the economic front. Hence we must strive to bring about this rapproachment. Some of the major gains are enumerated in the following paragraphs.

ADVANTAGES WHICH ACCRUE

Economic Gains. The first and major advantage is that our economic and developmental programmes can be given a boost by curtailing defence expenditure. The most lasting and important platform is economic in nature. We will be able to channelise our resources in more productive spending by reduced defence spending.

Political Stability. This is another important fallout. Stability in the South Asian region is a forerunner to the economic development of the region. This can best be achieved by respect for each others territorial integrity and non interference in other countries internal affairs. This is an achievable aim. Only thing is that the main contestants of the game need to get down to serious, purposeful and aim oriented discussion.

Force Reduction. Both India and Pakistan can boast of Armed Forces vastly disproportionate to their legitimate needs (of course the degree of legitimacy is contentious). By mutual agreement, it is possible to effect reduction in this force. Manpower thus released coupled with capital made available by reduction in the defence expenditure can probably be put to better use in the agricultural or industrial sector. Even loans for small scale industries on a larger level of population involvement can be contemplated. Force reduction has another important impact. As per a recent study, a major share of the defence expenditure goes towards pay bills. There can be considerable economy effected in this.

Operational preparedness. The proposal to have a mined security belt will have a major impact on operational preparedness. As brought out earlier we can think of considerable reduction of troop activity during the preparatory stages of an impending war.

Developmental Programmes along Border. A no war scenario will enable us to undertake large scale developmental projects along the border. This would also help in improving the quality of life of residents of these areas.

End to Internal Strife. The involvement of Pakistan in supporting Anti Indian movements in India is an open Secret. By a process of rapprochement, it is possible to put an end to this and end internal strife in our country to a great extent.

Indo-Pak relations are at the cross roads today. Policy makers on both sides of the border have to carry out a realistic appraisal of the global situation and come to terms with each other. Peaceful coexistence is the only way to ensure economic development of both the countries. We need to take all possible measures to achieve this aim.

Peaceful coexistence in the subcontinent is achievable. Myopic politics have to be set aside and the subcontinent has to be viewed in its entirety. Regional pacts are the order of the day. We have to be alive to the dynamic changes in the world and doctor our leanings accordingly. This is the surest way to ensure that India occupies its rightful place in the subcontinent and the world at large.

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The Gulf War -- The Last Hundred Hours : Lessons for the Indian Mechanised Forces

BRIG RD LAW (RETD)

THE AIR WAR

The Gulf War started on 17 January 1991 with an air and missile offensive launched by the US led Coalition after the 15 January deadline for withdrawal from Kuwait was ignored by the Iraqi President. The Multinational Forces (MNF) sustained an intense rate of over 2000 sorties per day by the MNF air forces and carrier based naval aviation. In addition several hundred cruise missiles were launched from naval ships against targets in Iraq. The air war went on for five weeks, but the air battle was really won on the very first day by the MNF after which they operated in an environment of total air supremacy. The air operations were planned to be carried out in four phases:-

Phase 1. Destruction and neutralisation of the Iraqi Air Force, air defences, command control and communication (C³) resources, defence industries, including chemical weapon plants, nuclear establishments and oil production and refining industry. The air effort employed was to include a proportion of electronic warfare missions against Iraqi C³ facilities and air defence weapon guidance systems.

Phase 2. Iraqi air defence in and around Kuwait.

Phase 3. Interdiction of Iraqi forces in and around Kuwait by destroying and keeping out of commission bridges over major rivers.

Phase 4. Close air support of MNF ground operations.

Attrition attacks on Iraqi ground forces holding Kuwait were to be carried out during all phases and their tempo increased steadily and the apogee reached as the time for the ground offensive drew near. Due to the rapid success of Phase 1, Phase 2 and 3 were merged into it.¹

The Iraqi ground forces suffered heavy attrition, particularly in tanks, infantry combat vehicles and artillery. Iraqi Army in Kuwait had a 3 to 2 superiority over the MNF in tanks. In artillery it was even greater. When the ground offensive started the Iraqi troops in forward defences had suffered

over 50 per cent attrition and those in depth had been subjected to between 25 and 50 per cent attrition in terms of tanks, other armoured vehicles and weapons.²

Supplementing the air forces and naval aviation in their attacks was a sizeable complement of army attack helicopters of the MNF who attacked Iraqi tanks and other weapons deployed in their forward positions.

The MNF air attacks were also directed against Iraqi Army C³ assets in Kuwait to take advantage of the known Iraqi weakness of their commanders, particularly at the junior level, of not being able to act on their own initiative in the absence of orders from above.

The Iraqi Army had made good use of the time at its disposal to plan and build an elaborate system of obstacles and fieldworks and lay extensive minefields for defence of the occupied territory. These defences, which had been well stocked, held by determined troops, could have proved very difficult and expensive to overcome. The defences were based on, what we call, a ditch-cum-bund obstacle which consisted of an anti-tank ditch with an embankment on either bank, the one on the home bank being naturally higher. The ditch was filled with oil which was to be set alight when the enemy tried to cross it. The troops manning the defences had bunkers, many of them concrete ones, with all direct firing weapons under overhead cover. Tanks were in dug-in hull down positions. The main defences faced the Kuwait-Saudi border and the Kuwaiti coast as the Iraqi Army expected a direct attack from the south along with an amphibious landing in the east. A ditch-cum-bund obstacle extended some distance to the west along the Saudi-Iraq border, but it was neither as well prepared nor strongly held, although it was reported to be backed up by a mile deep minefield. In addition to the tanks deployed in forward defences, there were some Iraqi Army armoured divisions deployed in depth in Kuwait as counter attack reserves. There was a very large amount of artillery supporting the defences, far more than what the MNF could muster. A powerful mobile force of eight Republican Guards armoured and mechanised divisions was located in south-eastern Iraq, to the north and north-east of Kuwait. This was evidently the reserve for launching an offensive into Saudi Arabia at an opportune moment - something approximating the Soviet operational manoeuvre groups (OMGs).

A general opinion began to grow in the media after a few days of the air offensive that despite the massive air effort employed by the MNF, Iraq was still holding out. After about a week of the war even some analysts in India began expressing views that the air offensive had failed to achieve its aims.³ Obviously the aim of the air offensive could not have been as assumed by such analysts. The build up of troops in the region by the

Coalition indicated that a ground offensive was anticipated.

It is an established fact that an adversary cannot be defeated by air power alone. It is necessary to defeat his ground forces and occupy his territory. If that be so, the wisdom of such an air offensive involving heavy expenditure of resources might be questioned. A conclusion reached by Rommel after the North African Campaign in World War II provides the answer. He wrote, "..... If the enemy has air supremacy and makes full use of it, then ones own command is forced to suffer the following limitations and disadvantages."

"By using his strategic air forces the enemy can strangle ones supplies..."

"The enemy can wage the battle of attrition from the air,"

"Intensive exploitation by the enemy of his air superiority gives rise to far reaching tactical limitations.... for ones own command."

In future the battle on the ground will be preceded by the battle in the air. This will determine which of the contestants has to suffer the operational and tactical limitations detailed above, and thus be forced, throughout the battle, into adopting a compromise solution."⁴

It is clear that the air offensive was not an end in itself, but a prelude to the ground offensive which was to follow.

The aim of this article is to briefly study the basis of planning and conduct of the ground offensive in the Gulf War and attempt to draw some lessons from it, below the strategic level, which could be of benefit to our armoured and mechanised forces.

THE GROUND OFFENSIVE

THE DOCTRINE

A direct assault on a defensive position requires about 3 to 1 superiority. For attacking well prepared defences like the Iraqi ones in Kuwait even greater superiority is advocated.⁵ The MNF ground forces were outnumbered by the Iraqis in Kuwait and, even after the attrition caused by the air offensive, a classical 'break-in', 'dog-fight' and 'break-out' battle of the El Alamein variety could be ruled out. Some other way had to be found. The answer lay in the US operational level doctrine of AirLand Battle.⁶ It would be worthwhile at this stage to digress a bit and see what the doctrine of AirLand Battle is all about. This would lead to a clearer understanding of why the ground offensive was conducted in the manner that it was.

In Soviet, as also most other Continental military systems the art of war is divided into three levels, viz strategic, operational and tactical. In Anglo-American military thought there was a gap between strategy and tactics and the conduct of war in that vague area was left to the ingenuity of commanders who, by virtue of their experience and ability, were expected to know what to do. There have been fine examples of generalship in the British and American armies in the past, but these have been examples of individual talent and flair rather than handling their commands on the basis of any recognised doctrines.

In post war years the NATO armies initially relied upon the use of tactical nuclear weapons to fill this gap and counter the threat posed by Soviet operational manoeuvre groups (OMGs) in a scenario of conventional superiority in favour of the Warsaw Pact. Under these circumstances, there was a possibility of NATO forces being defeated in a quick conventional War in Europe, before the multi-national NATO could arrive at the decision to use tactical nuclear weapons. Later, the acquisition of tactical nuclear weapons by the Soviet Union further complicated matters. The Americans, whose military system dominates the NATO, got down to the business of working out a solution. The outcome was the AirLand Battle doctrine and the recognition of the operational level of war. The doctrine formalised in the form of a US field manual designated FM-100-5.

Briefly, AirLand Battle emphasises close synchronisation of actions of air and ground forces into a single integrated plan to strike at the enemy in depth while engaging his forward troops. Attacks in depth envisage striking at the enemy's forward air fields, missile launching sites, logistic installations, C³ assets and, most importantly, his follow on forces or OMGs with air and ground forces. Closer in, air effort is used to cause maximum attrition to the enemy's forward troops while the ground forces keep them engaged. Once the battle of manoeuvre starts, maximum possible air effort is reserved for close support of the manoeuvring force. At theatre or other pre-determined level all services operate under a single commander in keeping with the principle of unity of command which US armed forces recognise as a principle of war. In the Gulf, general Norman Schwarzkopf combined the functions of Theatre Commander of the Kuwait Theatre of Operations (KTO) and the Army Commander. In the former capacity he exercised command over all Coalition forces and as the Army Commander he was responsible for planning and conduct of the ground offensive.

AirLand Battle doctrine clearly has its roots in the doctrine of Blitzkrieg developed in Germany after World War I and practiced with great success in World War II. The German doctrine, as is well known, was based on theories conceived by British military thinkers like Fuller, Liddell Hart

and Martel, but rejected by the ultra conservative British Army.⁷ The foundation of AirLand Battle was perhaps laid in World War I when, during the Battle of Cambrai in February 1918, cooperation between tanks employed in mass and aircraft was successfully tried out for the first time. In Fuller's recommendations following a project study done by him, which became known as Plan 1919, he visualised air landing of troops on an objective in depth, ahead of advancing tanks, in addition to several other ways in which tanks and aircraft could cooperate with each other.⁸ Writing today Fuller would naturally use the term 'mechanised forces' instead of 'tanks'. Many of the roles visualised by him for the air force are today performed by army aviation more effectively.

THE PLAN

General Schwarzkopf planned his main thrust from the west of Kuwait to envelop all Iraqi forces south of the Euphrates River by cutting off all exits for them. It was expected that such a move would draw out Iraqi armoured and mechanised formations into a mobile battle which was a known Iraqi weakness.⁹ Iraqi armoured formations had a poor record of performance in the 1973 Arab-Israeli War, as also against the ill trained and unprofessional Iranian Revolutionary Army in the Iraq-Iran War. This was attributed to the inability of its officers, particularly at junior levels, to use their own initiative and take quick decisions in the heat of battle. In fact use of initiative was not encouraged. Disagreeing with a senior was unpardonable at all levels and several senior officers who disagreed with Mr Saddam Hussein were summarily eliminated. The Iraqi officer cadre had been brought up in a tradition of continually looking back to their superiors for instructions.¹⁰

The plan provided for a rapid thrust by mechanised forces on a two corps front from the west of Kuwait in a turning movement in a north-easterly direction. VII US Corps consisting of 2 US Armd Cav Regt, 1 and 3 US Armd Divs, 1 US Mech Div and 1 British Armd Div was to attack parallel to and along the western border of Kuwait. 1 British Armd Div was to swing out to the east to engage the southern elements of the

The following abbreviations have been used in formation and unit designations:-

Armoured Division - Armd Div

Marine Division - Marine Div

Cavalry Division - Cav Div

Armoured Cavalry Regiment --

Infantry Division (Mechanised) - Mech Div

Armd Cav Regt

Airborne Division - AB Div

Light Armoured Division --

Lt Armd Div

Republican Guards. XVIII US Airborne Corps Comprising 3 US Armd Cav Regt,¹¹ 24 US Mech Div and 101 US AB Div was to advance along the west of VII US Corps with the task of blocking Highway 8, the only escape route for Iraqi forces in Kuwait and the Republican Guards north and north-west of Kuwait. The main ground thrust of the Corps was to be carried out by 24 US Mech Div with 3 US Armd Cav Regt moving ahead. 101 AB Div was to mount an airmobile assault to establish a forward base for refuelling and rearming of helicopters for further operations. With the base established, the Div was to conduct airmobile operations to block Highway 8 and crossings over the Euphrates River. Attack helicopters of 101 AB Div, as well as those from the Corps Aviation Brigade were to attack the Republican Guards.

6 French Lt Armd Div with a brigade from 82 US AB Div was to protect the extreme western flank of the MNF by establishing a defensive line between the Saudi border and the Euphrates River. It was also to capture Salman Airfield and establish another forward base there.

In the east, along the Saudi-Kuwait border starting from the west 1 US Cav Div with an armoured brigade from 2 US Armd Div was to demonstrate north-wards along Wadi Al Batin to create an impression that the main armour thrust of the MNF was coming along that axis. To its east Egyptian led heavy forces were to attack north. Further east were 1 US Marine Div with an armoured brigade (Tiger Brigade) from 2 US Armd Div and 2 US Marine Div with the tasks of attacking Jahra and Kuwait International Airport respectively. Finally, two Saudi Divisions, which included the Kuwaiti contingent, backed up by 5 US Marine Expeditionary Brigade were to attack along the coastal axis towards Kuwait City.

DECEPTION PLAN

The deception plan aimed at leading the Iraqis to believe that the main MNF thrust was to come from the south across the Saudi border, with the main armoured thrust astride Wadi Al Batin, together with a major amphibious assault from the east on the Kuwaiti coast. To implement the deception plan the following measures were adopted:-

- (a) Initially concentration areas for all MNF ground forces were located directly south of the Kuwait-Saudi border between Wadi Al Batin and the Gulf coast. Once the ability of Iraq to carry out any air reconnaissance had been eliminated, formations of VII US Corps, XVIII US Air-borne Corps and 6 French Lt Armd Div were side-stepped westwards into new concentration areas ten days before the ground offensive, unknown to Iraq.

- (b) Considerable naval activity, including minesweeping operations, was kept up in the northern Gulf near the Kuwaiti coast. US battleships regularly shelled Iraqi army positions in Kuwait. Presence of a large US Marine force afloat in the Gulf and the conduct of several amphibious exercises on the Saudi Coast were publicised and naval activity in the Gulf was increased as the time for the ground offensive drew near.
- (c) The feint by I US Cav Div along Wadi Al batin has already been mentioned earlier.
- (d) MNF artillery made it a practice to set alight the oil filled ditch along the Kuwait-Saudi border in different areas at random to make it appear routine activity and to burn up the oil.
- (e) The attacks across the Saudi-Kuwait border were timed to commence before the operations of VII US Corps and XVIII US Airborne Corps in the west.

CONDUCT OF OPERATIONS

Following President Saddam Hussein's defiant ignoring of the US President's last call to start withdrawal from Kuwait by 23 February 1991 the US led Coalition forces launched the ground offensive in the early hours of 24 February.¹²

EASTERN SECTOR

The attack started first along the coastal axis at 0400 hours. Other formations between the coast and Wadi Al Batin attacked at different times during the morning. The breaching of the obstacle posed no serious problem to armoured earthmovers. The minefields were breached by first firing fuel air explosive charges over them which detonated most of the mines. This was followed by firing mine clearing line charges (also called vipers or snakes) across them to ensure 100 per cent clearing of lanes for tanks, vehicles and troops to go through. Iraqi tanks and other weapons opened fire on the attacking troops but were soon silenced by tanks, anti-tank missiles, artillery and attack helicopters which engaged them. The attacks pushed through the main Iraqi defences which offered very little resistance and the troops manning them either withdrew north or surrendered. Therefore, the attacking troops only met sporadic artillery and other fire. I US Cav Div had moved some 20 miles along Wadi Al Batin before meeting some hurriedly sent reinforcements to meet what the Iraqis believed was the main MNF armoured thrust. By the morning of 25 February 1 and 2 US Marine Divs, having moved day and night were poised to attack Kuwait International Airport while the Saudi troops made progress along the coast. The

Tiger Brigade which was leading 1 US Marine Div came up against an Iraqi armd div defending the International Airport. In a quick engagement M1A1 tanks of the tiger Brigades destroyed 20 Iraqi tanks and forced some more to surrender. M1A1s firing through thick smoke caused by burning oilfields, using their thermal sights, were picking off Iraqi T-55s and T-62s hiding behind the smoke. Soon two Iraqi major's surrendered with the brigades which they were commanding. Having taken the international Airport the two Marine Divs were on the outskirts of Kuwait City which they had sealed off by 26 February. The honour of entering the City was reserved for Arab forces who entered it the next day.

Just as 1 US Cav Div was about to pull back to follow VII US Corps an Iraqi Republican Guard armoured division was detected moving south, evidently to meet the armoured threat which they thought was coming up along Wadi Al Batin. The Cav Div was left where it was.

Although published accounts do not say so, it would appear that the quick success of the forces which attacked across the Kuwait-Saudi border was unexpected as this effort was not the main effort of the MNF and was in all probability meant to contain the Iraqi troops holding the defences.

WESTERN SECTOR

6 French Lt Armd Div, with a brigade of 82 US AB Div attached, went ahead of XVIII US Airborne Corps and movea northwards into Iraq. Despite adverse weather conditions it made good progress towards Salman Airfield, clearing minor opposition en route. It captured the Airfield on 25 February where the brigade of 82 US AB Div established the forward base. On 26 February the Div had completed its task of securing the western flank from the Saudi border to the Euphrates River.

XVIII US Airborne Corps was the next to start. The Corps ground thrust was led by 3 US Armd Cav Regt followed by 24 US Mech Div, with a brigade of 82 US AB Div attached to it, forming the main punch. Simultaneously 101 US AB Div seized its first objective 50 miles inside Iraq following an air mobile assault and started to establish a forward refuelling and rearming base for helicopters. While convoys of fuel and ammunition carrying vehicles were on the way, heavy lift helicopters brought in large rubber bladders containing aviation fuel, crates of ammunition and essential light vehicles slung under them so that refuelling and rearming points could start operating immediately. By the evening the forward base was fully established and a brigade of 101 US AB Div was on the way to its second objective, an airfield in the Euphrates Valley near Nasiriyah. During the night troop carrying helicopters also landed troops of 101 US AB Div in pouring rain to cut Highway 8. By the morning of 25 February the

Highway was effectively blocked sealing the only exit for the Iraqi Republican Guards. By 26 February XVIII US Airborne Corps was firmly established in south-western Iraq. As it was about to proceed further north-west to take on the part of the Republican Guards located south of Highway 8, the weather turned foul grounding all its helicopters and forcing the Corps to suspend operations that day. The leading brigade of 101 US AB. Div was on the Euphrates, 130 miles inside Iraq. On 27 February 24 US Mech Div, having moved the whole of the previous night, captured Jaliba Air base north of Kuwait and destroyed several Iraqi aircraft on the ground. Elements of 101 US AB Div were moving east along both banks of the Euphrates to seal off any possible escape routes for Iraqi troops.

VII US Corps, which was the most powerful striking component of the MNF had to get across a ditch-cum-bund obstacle inside Iraqi territory to launch its thrust. Using armoured combat earthmovers, its engineers made 24 crossing places over the obstacle. Immediately thereafter I US Mech Div established a bridgehead across it for the passage of its armoured divisions. There was practically no opposition to the establishment of the bridgehead by Iraqi troops who started surrendering in large numbers. At about 1430 hours two US armoured brigades moved out of the bridgehead, with their leading tanks fitted with mine clearing ploughs, to clear lanes through the 1 mile deep minefield which was reported. No mines were, however, found. With 2 US Armd Cav Regt in front the Corps started its thrust with 1 and 3 Armd Divs up. 1 British Armd Div swung off east to ensure that nothing got in between the Corps right flank and Wadi Al Batin and to take on the southern elements of the Republican Guard. Having started off in the afternoon, the Corps had penetrated 50 miles into Iraq. Its reconnaissance elements had gone in even deeper but had to halt to allow the heavier forces to catch up. On 25 February 2 US Armed Cav Regt advanced further north-east. On that day the reconnaissance regiment of 1 British Armd Div contacted the Republication Gaurd Division which was occupying the Div's objective. While the Iraqi positions were being probed and engaged by attack helicopters grouped with the light armour the rest of the Div was moving up. 1 British Armd Div, having come up, attacked the Republic Guard position in the afternoon and continued the attack after dark. The Div kept on engaging more Iraqi position on 26 February and destroyed 200 tanks and 100 other armoured vehicles and rendered ineffective one Republican Guard Mechanised Division. The only casualties suffered by 1 British Armd Div were 13 men killed when two of its Warrior infantry combat vehicles were hit by a USAF aircraft providing close air support. The Iraqi mechanised division attacked by 1 British Armd Div was deployed south facing Wadi Al Batin.

2 US Armd Cav Regt made contact with the main body of the Republican Guard on the night of 26 February. The light armour kept the Iraqi troops engaged through the night and by the morning it was established that it was indeed the Republican Guard. The Armoured Cavalry using its M1 tanks and attached attack helicopters kept up the pressure against the Iraqi troops all morning awaiting arrival of the armd divs. During the early afternoon it appeared that the Republican Guards were trying to slip away, but the Regt kept them under watch. In the evening tanks of 1 and 3 US Armd Divs were seen approaching in the distance. The Republican Guard which had eight divisions in the area originally had been whittled down by air and ground action until then to two divisions. The forward of the two divisions was attacked by the two armd divs of VII US Corps at midnight of 27/28 and the one in depth was taken on by attack helicopters of the Aviation Brigade and close support aircraft. Once the first division had been over run 1 and 3 US Armd Divs continued the attack on the second division. The battle went on non stop for 16 hours during which the Republican Guard divisions put up stiff resistance. Eventually they started throwing down their arms and coming out of their tanks to surrender. The battle was over.

Due to the complete breakdown of communications Iraqi commanders were not aware of what was going on in the West where the main MNF offensive had come. This was borne out by a tank transporter convoy loaded with T-72 tanks of a Republican Guard Division moving west on Highway 8 on 26 February running into 24 US Mech Div unknowing that the Highway had been blocked by 101 AB Div on the night of 24/25 February. Even Baghdad did not know what had happened beyond having an idea that things were going wrong. Captured Iraqi plans showed that they were entirely based on the MNF attack coming from the south across the Saudi-Kuwait border together with a strong amphibious landing on the Kuwaiti coast. The main attack from the west took the Iraqis completely by surprise and their commanders were just not able to react to the rapidly developing situation.

LOGISTICS

There is a well known saying that the desert is the tactician's paradise, but the quartermaster's hell. The bulk of the troops employed for Operation Desert Storm were brought over from Europe or USA and were essentially organised, equipped and trained for operations in the European Theatre. Their logistic support and organisations were also designed for that theatre. This was a different environment. The major differences between Europe and the desert, from the logistic standpoint were that -

- (a) there was no railway system available and the road communications in the concentration areas and the area of operations were very limited;
- (b) there were no established depots in the theatre holding stocks of equipment or commodities;
- (c) water was a critical commodity with limited sources some of which were quite far from the concentration and operational areas;
- (d) vehicle and aviation fuel was locally available, in adequate quantity and an internal distribution pipeline was available, though it did not serve the concentration areas.

The main logistic base for the MNF was established at Dahrان in Saudi Arabia on the Gulf coast, several hundred miles from the concentration areas.

Fuel for vehicles was identified as the largest requirement for the essentially mechanised force assembled for the operation. The requirement of aviation fuel for the MNF air force in view of their strength and the intensity of operations was also heavy. Besides the air forces there was a large complement of army aviation. A new pipeline system was created using standard US Army 6 inch aluminium pipe sections which can be quickly coupled to lay field pipelines. The army pipeline system was connected to the existing Saudi Arabian internal distribution pipelines. The system was also linked up with some Saudi refineries. Forward of pipeline heads or terminals, tractor trailer combination tankers were used upto corps maintenance areas which were established well forward and were not as dispersed as they would normally have been as there was no air threat.

For forward movement of fuel in the desert the usual 5000 gallon tanker vehicles were replaced by special high mobility 2500 gallon tankers known as HEMTTs (heavy expanded mobility tactical trucks) in US terminology. For fuel requirements of Army Aviation, in addition to tankers, provision was made for airlifting of aviation fuel to forward refuelling points in giant rubber balloons suspended under heavy lift Chinook helicopters. In an emergency this system could have been used for tanks and other vehicles also but the need did not arise.

For refuelling of tanks and other combat vehicles at unit level a filling station concept was employed. Fuel tankers were moved up to a point designated by the unit commander where sub-units refuelled by coming to that point in turn.

Water supply turned out to be an easier problem to solve than what had been originally visualised. Several sources were found in the area and,

as the situation permitted, production and purification capability was moved forward to reduce the distance over which water had to be carried in vehicles for supply to troops.

Normal medical facilities upto base hospital level were established and arrangements for evacuation of casualties made. Due to the exceptionally light casualties, they were not even adequately exercised.

The key to the efficient support of the Operation lay in the integration of logistics into operational planning from the very beginning and the involvement of logistic staffs and services into planning at each level and stage to ensure that all operational plans were logically feasible.¹³

PERFORMANCE OF EQUIPMENT

All MNF contingents, with one exception, were equipped with weapons and equipment of Western origin. The exception was the Syrian contingent which was equipped with Soviet equipment including T-72 tanks. However, no published account of the performance of Syrian troops or their equipment is available. There is a basic difference in the design philosophies behind military equipment of western origin and that of Soviet and East European origin. In the former case quality and state of art receive greater emphasis than the latter where simplicity and ease of bulk manufacture by a relatively less sophisticated industrial infrastructure are given greater weightage. During the Cold War period the Warsaw Pact forces enjoyed substantial numerical superiority over those of the NATO and, therefore, could compromise on technological refinements. Western equipment, on the other hand, was designed to overcome the numerical inferiority of the NATO forces. Several third world countries, not excluding India, which did not have the kind of numerical superiority over their potential adversaries as the Warsaw Pact countries had, went in for equipment of Soviet or East European origin for other considerations such as political factors, ready availability, quick deliveries, favourable payment terms like deferred payments in their own currencies and so on. Iraq, of course, had the required numerical superiority against its potential enemies in the region, but had not bargained on having to fight a super power led coalition. A brief discussion on some of the key items of ground forces equipment which played a significant part in the Gulf War follows.

TANKS

The superiority of western tanks, particularly the US M1A1s over the contemporary Soviet T-72s was clearly established to the extent that the latter is clearly not capable of standing up against the former in battle. The M1 had generated a great deal of controversy during its development

when a rather revolutionary decision was taken to use a turbine to power it instead of a conventional diesel engine. Every little 'bug' which showed up during the development trials was greatly exaggerated by the diesel 'lobby' which went to the extent of calling the entire project a disaster. A justifiable criticism perhaps was the choice of the 105 mm gun as its main armament, which was rectified by replacing it with the German smooth bore 120 mm gun in the later models, which also incorporated certain other refinements. The tank's passive thermal imaging night sights for the commander and the gunner and passive driver's sight give the tank the ability to fight at night with efficiency almost matching day time. In fact the thermal imaging system can even be used in daytime to see through dust, fog or smoke. The choice of active infra red for the T-72 is perplexing as it offers no advantage whatsoever on the modern battlefield which would have several varieties of night vision equipment in use, each of which can pick out active infra red sources as clearly as white light searchlights. Between active infra red and thermal imaging there lie three generations of passive image intensification and low light TV night sights.¹⁴ While the M1A1 could penetrate through any part of the T-72, the latter could not penetrate the front or side armour of the M1A1. The serviceability rate of the M1A1 was in excess of 90 per cent after four days of battle. The turbine has a higher fuel consumption than a diesel engine of equivalent horse power particularly at idling speed at which it is necessary to run it even when stationary if the tanks systems are on as the tank lacks an auxiliary power unit¹⁵ In the entire operation out of 350 M1s and 1650 M1A1s employed there were only 8 battle casualties four of which were write offs and the remainder repairable. Only four tanks which received hits in the rear were penetrated and the rest went over mines. There were no crew fatalities amongst M1 or M1A1 crews.¹⁶

The British Challenger I also proved superior to the T-72 in terms of night vision, fire power and armour protection. Four British armoured regiments equipped with this tank operated with 1 British Armd Div. Though they destroyed several T-72 no Challengers were lost. With a lower power to weight ratio than the M1, the Challenger is not as agile.

MULTIPLE LAUNCH ROCKET SYSTEM (MLRS)

This type of weapon was used for the first time in war by a Western army and found very effective against area targets like gun areas. The Soviet Army has had weapons of this type since World War II and used them with great effect. Even the German Army had a similar weapon then called 'Nebelwerfer'. The US MLRS is possibly more sophisticated.

ELECTRONIC WARFARE EQUIPMENT

Besides physical destruction of Iraqi C³ Systems, electronic jamming of Iraqi radio nets as also early warning and weapon guidance systems played an important part in the War. Understandably no details of the equipment used have been released as such equipment is invariably very highly classified.

ATTACK HELICOPTERS

Army aviation helicopters were used for the first time in large numbers as integrated elements of all arms mechanised task forces. The Gulf war has proved the indispensability of army aviation as a combat arm in a modern army. Besides providing light reconnaissance troops tank killing capability when grouped with them, attack helicopters increase the reach of armoured or mechanised task forces by engaging enemy tanks at ranges beyond tank gun range or ground level visibility. In World War II Rommel had perfected the employment of 88 mm flak guns in the anti-tank role in conjunction with tanks during offensive as well as defensive actions. Liddell Hart called it the modern equivalent of the old sword and shield combination. In his defensive-offensive method of mechanised warfare Rommel used 88 mm guns as the shield by engaging enemy tanks beyond tank gun range to blunt his 'sword' and then used his own tanks as his 'sabre'.¹⁷ The tank and attack helicopter is the present day version of this concept. The sword and shield combination could only work if both were handled by one person. It would be ridiculous if one person was to handle the sword with another wielding the sabre. Attack helicopters operated by the air force and tanks by the army is equally impracticable. The US AH-64 proved to be a good weapon system, though reports call for improvement in its night capability.¹⁸

LESSONS

With virtually no resistance put up by the Iraqi Army, the ground offensive was perhaps more in the nature of a very large scale two sided exercise with troops in which live firing was permitted! However, even exercises without troops produce lessons if they are properly set and conducted. The final ground offensive of Operation Desert Storm has, in fact, produced several lessons which are relevant to the Indian Army, in particular to its armoured or mechanised forces.

COMMAND OF MECHANISED FORCES

The qualities required for successful command of armoured or mechanised forces are well known. It is beyond the scope of this article to enumerate them. These qualities must be inculcated and encouraged, particularly amongst officers of mobile arms, from an early stage of their

career. Those who display aptitude for the command of mechanised forces should be given opportunities to enhance their skills by posting them to appropriate appointments. Those senior officers who lack the required qualities and aptitude should not be given command of armoured or mechanised formations, irrespective of their seniority, other qualifications or parent arm. It must be obligatory for reporting officers to comment on the qualities required for command of armoured and mechanised formations in officers' annual confidential reports before they become due for promotion beyond the rank of Colonel. If we look at our own record of 1965 and 1971 Wars, while some excellence was displayed in command of armoured regiments and subunits, there is not much that can be said in favour of the handling of our armoured formations. Our armoured brigade commanders were readily willing to allow their brigades to be treated as 'tank brigades' and their regiments parcelled out to infantry formations while they attached themselves to corps or infantry divisional headquarters as 'armour advisers'. In one case an armoured brigade commander stretched out his brigade in a thin of one tank depth to cover the entire frontage of an infantry division deployed in defence, the depth being provided by the command tanks of his brigade headquarters. It was not that there were no suitable officers in the Army. They happened to be commanding infantry or mountain brigades or holding staff appointments at that time.

NEED FOR A DOCTRINE

There must be an official doctrine for the conduct of mechanised warfare at armoured/mechanised formation levels, ie brigade and division. At the time when this writer was in service the fountainhead of all tactical thought was the Tactical Wing of the Infantry School and the 'bible' was *The Infantry Division in Battle*, a British War Office manual reprinted in India. Hopefully things have changed. There must also be a doctrine for the handling of a corps which includes one or more armoured or mechanised formations in its order of battle and even an army (in our case a command) which includes one or more 'strike' corps. The question of recognising a level of the art of war between tactics and strategy should be considered.

We must have some level at which there is a single decision making authority in the event of inter service disagreement on operational matters. At present such authority theoretically rests with the President of India in his capacity as the Supreme Commander of the Armed Forces, but he is not professionally qualified to give decisions on such matters. Whether we have theatre headquarters or a chief of defence staff system can be a matter for discussion, but there is no question that there must be a clearcut workable solution. We cannot go looking for one if there is an impasse at a critical juncture.

Perhaps a better way of arriving at solutions to matters of doctrine is to have an open debate on the subject. There is one going on in the USA on the subject of updating of AirLand Battle doctrine, or as they term it AirLand Battle Future. Several articles are currently appearing in their various defence journals written by serving and retired officers. The February 1991 issue of the Military Review has its first 61 pages devoted to AirLand Battle Future or ALBF. We do not have much in the way of widely read frequently published defence journals and if such a debate is to be conducted through the pages of the USI Journal it could go on for several years. In our case it would possibly be a good idea for an organisation like the USI to conduct a seminar on the subject.

ESPRIT DE CORPS AND MORALE

Morale has always been one of the greatest battle winning factors in war. Amongst other things it is related to esprit de corps. While the run of the mill conscript Iraqi soldiers had no will to fight and surrendered at the first opportunity, the Republican Guard formations put up a fairly stiff fight as being the elite of the Iraqi Army their morale was higher. The new all volunteer US Army proved to be a thoroughly professional force with a lot of pride in itself. Our system of voluntary service, regimental system and traditions are valuable time tested assets which must be carefully preserved and no dilution permitted.

EQUIPMENT

Fritz Bayerlin, Chief of Staff of the Afrika Korps said, "given equal leadership, equal training, equal supply conditions, the primary decisive factors in desert warfare are the number and manoeuvrability of the tanks and the range of their guns, after that comes the number of field guns and their range, and finally, the number of anti-tank guns and their range and calibre."¹⁹ Writing today he would almost certainly add "the ability to fight at night" and substitute "field guns" by "self propelled guns" and "anti-tank guns" by "attack helicopters". We could, applying General Bayerlin's view to our conditions, stretch the term 'desert warfare' to include plains warfare in open country.

TANKS

The T-72 has proved to be qualitatively inferior to the current western tanks, even though in the hands of better trained and motivated troops it might have given a somewhat better account of itself. Even as far back as 1982 several Syrian T-72s were claimed to have been knocked out by Israeli Merkavas firing APFSDS ammunition from their 105 mm guns.²⁰

It would be pointless at this stage to go into the whys and where-

fores of the acquisition of T-72s and the decision to license produce them in the country. We must urgently address ourselves to removing as many of their major shortcomings as possible. Two most glaring ones are its outdated active infra red night vision system and the inadequate armour penetrating capability of its main armament. If the latter weakness cannot be overcome by better ammunition, the gun would have to be changed. It should be remembered that Pakistan is a potential customer for the M1A1 and all its M-48s have been updated to M-48A5 level which includes thermal sights. T-72 improvement needs to be taken up on the highest priority on a time bound basis and not left to the DRDO's methods. Unfortunatley the DRDO's record in the sphere of combat vehicles is not particularly brilliant.

RECONNAISSANCE UNITS

Light armour based reconnaissance units are an essential component of armoured or mechanised forces for performing a variety of roles such as moving as mobile troops ahead of the main body of a formation, protection of open flanks, conducting feints and so on. With the total absence of light armoured regiments our mechanised forces suffer from a serious handicap.

SELF PROPELLED ARTILLERY

It is no secret that the Indian Army suffers from a self propelled artillery gap. One has only to brouse through some foreign defence journals to find it out. It is indeed a serious lapse that this has been permitted to happen and urgent steps are necessary to remove this shortcoming. Unless this is done our armoured and mechanised formations cannot be fully effective.

ARMY AVIATION

In 1986 the Army was permitted to raise an Aviation Corps and as a sop given the ownership of air observation post units and some helicopters for liaison duties. Attack and logistic helicopters are essential components of modern mechanised forces and they must form part of the Army Aviation Corps.

ELECTRONIC WARFARE

Radio communications are vital for successful conduct of mechanised warfare and steps, including introduction of jam proof frequency hopping radios, should be taken to minimise the chances of jamming by the enemy in war.

DITCH-CUM-BUND OBSTACLES

Ditch-cum-bund or other obstacles are not insurmountable. Given the necessary equipment and resources, mechanised forces can attack across them.

LOGISTICS

A good part of our western border runs through the desert where it may be necessary for our armoured and mechanised formations to operate. They must be provided with suitable all-terrain high mobility logistic vehicles in order to enable them to operate in areas where roads are not available. For emergency replenishment logistic helicopters can be used.

Our armoured regiments have had a requirement for suitable fuel tankers capable of cross country operation with facilities for rapid refuelling of several tanks simultaneously. They have used jerricans and barrels for refuelling of tanks, which, besides being time consuming, is very tiring for the crew. For the three man crew of the T-72, with possibly the commander away for reconnaissance or orders, it would be an impossible task for the remaining two men to haul up fuel barrels on to the tank. This three decade old problem needs to be solved.

CONCLUSION

The MNF ground offensive came about after five weeks of intensive air operations during which the Iraqi Air Force was completely eliminated, Iraq's defence industry extensively damaged, its civil and military telecommunications seriously disrupted and its road communications interrupted by destruction of all important bridges. Iraqi troops holding Kuwait were subjected to heavy attrition attacks which inflicted over 50 per cent attrition on the troops and equipment deployed in forward positions and between 25 and 50 per cent on those in depth. Besides the physical damage, the air attacks adversely affected the morale of Iraqi soldiers to the extent that they had no will left to fight.

The ground offensive was conducted in line with the US Operational level doctrine of AirLand Battle which was tested in war for the first time. The direction and speed of the main thrust took the Iraqi Army completely by surprise. Iraqi commanders, handicapped by breakdown of communications, were just not able to react to the rapidly developing situation. Iraqi opposition collapsed rapidly and the operation was over in four days.

Several lessons have emerged from this operation which are of relevance to our mechanised forces.

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Control of Electronic Spectrum Decisive in Air Warfare

AIR MARSHAL HK OBEROI, PVSM, AVSM, VM (RETD)

That USA and its allies will overwhelm IRAQ was expected. That they would do it in a relatively short time could also be visualised. But what could not be anticipated was the abject Iraqi capitulation. The so called 100 hours ground war was no war at all. Leave aside fighting, the Iraqis could not even manage an organised withdrawal.

Notwithstanding the detailed studies that are, underway, the principal reason for the resounding success of allies was their complete air superiority from the moment the first mission was launched. Some have wondered at the total paralysis that struck the Iraqi Air Force but a deeper reflection will reveal that this was inevitable. The allies particularly USA enjoyed absolute mastery in the control and exploitation of the electronic spectrum which over the years has emerged as a crucial factor if not the decisive factor in modern warfare particularly air operations.

During peace USA uses satellites and listening posts located all over the world for this purpose. AWACS and reconnaissance aircraft wherever possible are also utilised. The aim of this exercise is to prepare a library of all emitters (communications and radars) alongwith their locations, frequencies and other data like ECM/ECCM capability. Even friends and allies are not spared from such indulgence. The section for Iraqi emitters must have received continuous scrutiny after Iraq moved in to Kuwait.

During war while evesdropping and snooping by satellites is continued AWACS, ECM aircraft like the F-4s (nick-named Wild Weasels in USAF) and escort jammers and deception jammers/self protection jammers (SPJs) mounted on combat aircraft are used for offensive and defensive electronic warfare.

The AWACS fitted with powerful transmitters/receivers with wide frequency range can keep a watch on air activity in enemy territory up to a depth of 350 KM. They guide own aircraft for interception and other missions and jam enemy communications and radar emitters. The ECM aircraft are generally sent into enemy territory a few minutes before the strike aircraft and jam and confuse enemy interception and missile acquisition and guidance radars as also communication systems located close to the planned routing of strike aircraft.

The escort jammers housed in pods are mounted on one or more combat aircraft which accompany the strike aircraft and perform a role similar to ECM aircraft. Deception jammers fitted on combat aircraft warn the pilot of attacking aircraft or missiles for evasive action and automatic release of metallic chaff or emission of electronic signals to confuse the incoming missiles.

Iraq did not possess any AWACS or ECM aircraft. However, they had imported some escort jammers and SPJs from Western sources. These must have been of only notional value as the allies knew their operational parameters and could easily plan counter measures.

Iraqi Air Force thus was entirely vulnerable when air operations began in the Gulf. Its air defence system comprising radars and communications was virtually under electronic seige. Apparently, hardly any aircraft could be scrambled. The few that did manage to get airborne were virtually blind as little or no guidance could be provided from the ground and instead of being the hunters became the hunted. The allies consolidated their monopoly of air space by targeting Iraqi runways in the initial attacks itself and kept pounding them if there were any attempts to repair them. Notwithstanding the Iraqi aircraft that escaped to Iran from improvised surfaces, this was the beginning of the end of Gulf conflict.

Having secured the electronic spectrum and neutralised Iraqi Air Force the allies could now engage Iraqi ground defences at will. The hapless Iraqi soldier had nothing to counter this unprecedented onslaught and was forced to give up the battle. He need not be judged too harshly.

There are many lessons that will be drawn from this conflict. But one lesson stands clear; we may have the best aircraft in the world but if we cannot wrest the electronic spectrum or at least keep it neutralised the advantage in the air battle would tend to shift to the enemy. Consequently, like in Iraq, the army would stand exposed and its offensive capability circumscribed.

There is no doubt that the service headquarters must be looking at the Gulf conflict in detail but the subject of electronic warfare needs to be singled out for immediate attention and must be pursued jointly with the DRDO.

The DRDO had taken up a project to prove indigenous AWACS technology but in view of its immense complexity, progress understandably has been slow. Even the British after years of development and tremendous

expenditure, had to settle for the American E-3A. However, development of escort jammers and SPJs is considered relatively less complex and is well within our capability. In fact this appears to be a more appropriate route to AWACS technology. It is likely that these projects are already in hand but what is needed is speed and urgency. Additional resources if needed may be provided even at the expense of slight delay in some other projects.

LCA despite its proposed manoeuvrability sans the SPJ would suffer from severe lack of survivability.

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Kashmir Denouement

LT GEN KK NANDA (RETD)

INTRODUCTION

At the time of Independence in 1947 Sheikh Abdullah was the leader of the National Conference in the state of Jammu & Kashmir (J&K) then ruled by Maharaja Hari Singh. Ideologically, the National Conference and the Indian National Congress were similar. The National Conference did not subscribe to the two nation theory of the Indian Muslim League and had nothing in common with the concept of Pakistan. Its leadership was of the firm view that “the Kashmir identity could be best protected and even nourished in the Indian secular and democratic polity”. Ironically, it was the Maharaja who was in favour of independence. He was even willing to accede to Pakistan under certain conditions.

Pakistan was a bit too impatient. It sent in hordes of raiders supported by the Pakistan regular army into Kashmir on 25 October 1947. In fact, soon it turned into a full fledged attack on Kashmir. The British also supported Pakistan in this venture as an independent Kashmir or Kashmir as part of the Indian Union did not fit into their strategic plans. They also wanted J&K to accede to Pakistan. However, the people of Kashmir wanted the opposite. The Pakistani attack enabled the Maharaja to make up his mind and he asked for help from India. India insisted on his signing the instrument of accession before providing help. This was done on 26 October 1947, and the Indian troops were flown in. Soon the raiders were pushed back and the Pakistan ARMY defeated. The Kashmir was saved but unfortunately, India agreed to a ceasefire from 01 January 1949 when Pakistan forces were on the run and yet, they had 1/3rd of the J&K territory under their occupation. The pledge to the people of Kashmir at the time of accession was re-deemed. They were given a ‘special status’ and a free hand to deal with their own affairs.

After deploying Indian troops in J&K on permanent basis and securing borders with Pakistan, India turned its attention to the economic well being of the population. Crores of Rupees were sunk in food subsidies and general development of the state and yet the population was unhappy. Progressively, it became more and more alienated against the state politicians, the Centre and the State Govts and the corrupt administration. One of the major factors has been the Pakistan’s interference in the internal affairs of India and fishing in troubled waters in Kashmir.

Over the years, authorities both at the Centre and the State levels

have failed to recognise the problem in all its dimensions. They also kept on soft-pedalling the issues and never dealt with the trouble makers firmly. This resulted in an unprecedented uprising when Rubayya, the daughter of the then Home Minister in the Central Cabinet, Mufti Muhammed Sayeed, was kidnapped and subsequently released in exchange for five militants. Since then there has been an almost complete break down of law and order. Handling of the prevailing situation has further resulted in large scale grievances and discontent has been simmering. The Militants with the full backing of Pakistan have been ruling the roost. Whatever be the official stand of India on Kashmir, the events there in the recent past have left no doubt in anybody's mind that a problem does exist in Kashmir and it certainly is not a settled issue.

In 1990, we almost lost Kashmir. Do we want to let that happen? Obviously not. Then we need to pull ourselves out of the deep slumber, face the problem squarely and handle it with confidence and maturity. Compromise solutions must stop and decisions, however, unpopular must be taken by Govt of India and implemented by the State Administration in J&K without fear.

BACKGROUND

Kashmir's accession to India in October 1947, Sheikh Abdullah taking over the reins of administration and formalising the State's constitutional relations with the Govt of India at Delhi through the Delhi Agreement signed in July 1952 between him & Pandit Nehru, the then Prime Minister of India, are well known. Article 370 of the Indian Constitution was an essential part of this agreement.

The close and excellent relations between Nehru and Sheikh which were responsible for bringing about the Delhi Agreement soured fast and Sheikh Abdullah was dismissed in August 1953 and arrested. In the ensuing elections Bakshi Gulam Mohammad won and headed the State Govt. By & large, all the pre-Abdullah candidates lost. It was alleged that this was due to blatant rigging but the Administration both at the Centre and the State thought it otherwise. The assembly so elected became the constituent Assembly and it adopted the new Constitution in January 1957. Consequently, the Indian Government declared that the accession of J & K to India was complete.

It is beyond the scope of this article to enumerate the events of the next 30 years or so but these are generally known. Suffice it to say that the elections held in J & K during this period were generally not free except the one held in 1977. The Centre always manipulated and installed the Govt of its own choice in Kashmir and the genuine freedom to elect their own

representatives was denied to the Kashmiris. The Administrations generally were indifferent and inefficient and there was rampant corruption at all levels. Kashmir Muslims were unhappy and frustrated. They were angry and resented the lack of employment opportunities and these emotions were eminently exploited by Pakistan. It succeeded in building up this discontent into almost a rebellion which the Govts at both the State and Centre failed to perceive. To understand the psyche of the Kashmiris it is important to know about the nature of Islam in Kashmir and Kashmiriyat and the same are discussed below:-

(a) *Nature of Islam.* The Islam in Kashmir is rooted in its native culture and its nature there is different. The local population came under the influence of sufi saints known in Kashmiri language as 'rishis' who were unlike mullahs and adopted Islam on the basis of convictions. The conversions unlike other places like UP and Punjab of Pakistan did not take place on account of the might of the rulers. Culturally, therefore, the Kashmiri Muslims are not religious fundamentalists. The basic strain has been over-shadowed by the Pakistani propaganda through the Kashmiri youths duly brainwashed and trained by them. The thrust should now be to get the population at large back in the fold, and to insulate them from the fundamentalists.

(b) *Kashmiriyat.* Kashmiriyat is the Kashmir identity of which the entire population is very proud. They do not want anybody to outrage this sentiment of theirs. In 1947, when Pakistan invaded they felt that it wanted to forcibly annex Kashmir which hurt their Kashmiriyat and they supported India at the time of accession. Pakistan has now succeeded in convincing the Kashmiris that their Kashmiriyat is being threatened by the Hindus from outside the valley and they must resist it.

PAKISTAN'S CHANGING STAND

The Shimla Accord of 1972, signed after the Indo-Pak War of 1971 and keeping in mind the ground realities, Bhutto agreed that Kashmir is a bilateral issue between India and Pakistan and should be resolved between the two peacefully, by talks on the basis of the Shimla Accord. Pakistan has lately changed its stance and is invoking "the UN resolutions of the 1948-57 period" which envisage a plebiscite in the State.

On 21 April 1948, the Security Council passed a resolution recommending detailed steps for a plebiscite but Pakistan rejected it on 30 April 1948. The second set of UN resolutions was, however, accepted by both India and Pakistan on 13 August 1948. Another resolution of 5 January 1949 spelt out the procedure for a plebiscite. Under these resolutions a

detailed accord had to be negotiated which never materialized. Under Ayub Khan, Pakistan offered not to insist on a plebiscite and discuss alternatives provided India suggested them. India offered 1500 square miles more but Pakistan demanded Kashmir itself leaving only 3000 square miles for India at the 1963 Swaran Singh-Bhutto talks resulting in its failure. Pakistan opted for a war in 1965 to settle the issue but failed. The Security Council's resolution of 20 September 1965 about the ceasefire asked India and Pakistan to negotiate directly to solve the Kashmir problem. There was no reference to the earlier plebiscite resolution in it. Incidentally, this was also the last UN resolution on Kashmir.

After the 1971 war, Indira Gandhi and Bhutto signed the Shimla Accord on 2 July 1972. Under it, both sides were to respect "The Line of Control" in Kashmir "without prejudice to the recognised position of either". Differences were to be resolved "by peaceful means through bilateral negotiations". Subsequently, the two sides were to meet to decide on "a final settlement of Jammu & Kashmir" and establish durable peace. Shimla Accord implied the acceptance of the status quo by both sides but it did not fit into Zia's scheme of things. In 1986, Pakistan infiltrated trained terrorists into the Valley with a view to liberate Kashmir. They will now stall a settlement.

SITUATION IN JAMMU & KASHMIR IN RECENT PAST

SITUATION UP TO 1988

Pakistan trained terrorists after infiltration, took sometime to tie up with the local politicians and other activists, to plan their strategy to create trouble in the valley and to spread unrest. They started off with a series of bomb blasts throughout Kahsmir. There were blasts in the transport yards, near the Srinagar Club and the Central telegraph office, and at various tourist complexes. There were blasts on both sides of the Jawahar Tunnel and even a powerful explosive device was found in the tunnel itself which fortunately was defused before exploding. Prolonged 'hartals' in almost all the big towns soon followed the blasts. There were also a few incidents of firing by unidentified gunmen. Some militants on motorcycles fired at the sentry post outside the residence of the Sessions Judge who had passed the death sentence on Maqbool Butt. The CRPF post located in the High Court premises was not spared and two extremists fired on it.

On 10 June 1988, the Srinagar City Traders and Manufacturers gave a call for a bandh against the rise in the power tariff. All through the day, the police and the youth clashed. The Police opened fire killing three persons. Mirwaiz Maulvi Farooq, chairman of the Peoples Action Committee condemned the police firing and demanded a judicial enquiry. The clashes

continued for several days and many arrests were made. The extremists also lobbed a hand grenade in the Doordarshan Kendra and tried to blow up the Badshah bridge. It resulted in great panic in Srinagar and in all the other major towns of the valley.

Intelligence reports during this period indicated that a large number of automatic weapons with plenty of ammunition and large quantities of grenades and plastic explosives had been brought into the valley by militant Kashmiri youth after their training in POK (Pakistan Occupied Kashmir). The situation towards the end of the year was:-

- (a) A large number of Militant youths had sneaked back into the valley with huge quantities of arms, ammunition & explosives.
- (b) Training camps located on both sides of the Line of Control (LC), some of which were manned by experienced Afghan Mujahids were training youths in guerrilla warfare enlisted by 'Ansar-ul Islam' a new outfit supported by Muslim Liberation Front. It was estimated that about 500 Kashmiris were under training in POK.
- (c) Subversive literature captured indicated that Kashmir Liberation Front (KLF) had given a call for liberation of Kashmir and had exhorted the youth to be ready for 'jehad'.
- (d) The population in the major towns, particularly, in Srinagar had become defiant. They would start violent demonstrations on the slightest pretext, would be very aggressive and indulge in vandalism.
- (e) The Militants succeeded in creating panic in the population at large. The Kashmiri pandits and the other non-Muslims felt very insecure and the fear psychosis had crept in all the officials of the Govt, banks and all public and private set ups. The police and the Para Military Forces remained tied down in dealing with the disturbances.

SITUATION IN 1989 AND 1990

On 25 August 1989, the police raided the Jama Masjid of Srinagar to flush out the Militants. Initially, 250 persons were arrested but only 52 were detained after the preliminary investigations. The valley was up in arms again. The opposition parties accused the Police and the Para Military Forces for resorting to excess use of force and inflicting atrocities particularly on the youth.

On 9 December 1989, Rubaiya Sayeed, the daughter of the Union Home Minister, Mufti Mohammad Sayeed was kidnapped by the members of JKLF (Jammu & Kashmir Liberation Front) in Srinagar. She was released on 14 December 1989 in exchange of five militants as demanded

by JKLF. It led to more violent demonstrations, police firings and more deaths. There was general escalation of unrest in the population resulting in indefinite curfews. Para-military forces also started combing operations on 17 December 1989 in the valley. This led to more mob violence and clashes. There was further escalation in the confrontation between the Militants and the Administration.

On 18 January 1990, Mr. Jagmohan was appointed the Governor of J & K with the task of restoring the law and order and getting hold of the situation which had completely gone out of control. Farooq Abdullah, the Chief Minister did not like the new Governor's appointment and resigned. The state was put under President's rule. Later the J & K Assembly was dissolved on 19 February 1990. During Farooq Abdullah's Chief Ministership, there was practically no law and order and the situation had completely gone out of control. To bring in some semblance of order and respect for the Govt authority the new Governor had no choice but to be ruthless. He ordered widespread searches and raids through the Security Forces who were given the necessary authority within two days of his taking over. The state police was sidelined. There were also indefinite curfews with short breaks, of few hours. It was hard on the people but the Governor was able to reduce the problem to a manageable limit in a short span of time.

There were, of course, large scale protests against the coercive manner in which the Security Forces operated. On 22 January 1990 the J & K Police also protested against the strong arm measures taken by the Security Forces in dealing with them.

The Committee for initiative on Kashmir consisting of Mr. Tapan Bose, Mr Dinesh Mohan, Mr. Gautam Navlakha and Mr. Sumanto Bannerjee visited J & K from 12 to 16 March 1990. They found that "the allegations of the populace about the indiscriminate killings, arbitrary arrests, unlawful searches, unprovoked assaults on peaceful demonstration and a complete dislocation of normal life due to imposition of indefinite curfews" were generally correct. The Administration justified their actions on the grounds that these were necessary to contain terrorism.

Mir Waiz was killed on 21 May 1990 in his home. His body was taken over by his supporters and taken out in a procession. The mob in its frenzy attacked the Central Reserve Police Force (CRPF) who were deployed on legitimate duty. CRPF reacted, perhaps over reacted and killed a large number in the mob. It created tremendous hue & cry in Srinagar as well as in Delhi. Governor Jagmohan was given the marching orders and Girish Saxena took over from him. It was not fair and the change sent wrong signals to the Militants and their supporters across the border but it had an advantage. Jagmohan was there when to save Kashmir ruthlessness was

absolutely necessary. He performed well and saved Kashmir for India. That having been done a new man on the scene would be more welcome to Kashmiris. Girish Saxena became more acceptable and was placed well, in dealing with militancy and other aberrations which had cropped up between the people at large and the Administration.

PRESENT SITUATION IN JAMMU & KASHMIR

As of today (June 1991) there is hardly any change in the overall situation. It is estimated that there are 3000 Militants in the valley. They are lavishly equipped, have all the weapons, ammunition and explosives they need, and have more than adequate backing in terms of money, advice and direction from across the border. There has been renewed violence leading to a large death toll again. They enjoy civilian backing in the valley to a good measure and have been able to successfully thwart all attempts by the Govt. to restore normalcy in the troubled state. The Militants are certainly not close to realising their goal of "azadi" but they have succeeded in inflicting heavy casualties on the Security Forces and have kept them at bay. In fact, they continue to rule the roost and have become a menace. It is believed that nearly 5000 to 6000 Kashmir Militants are amassed along the LC to be pushed into Kashmir as indicated by the captured Militants. With the onset of summer the mountain passes are now open and infiltration will be easier. Attempts will be made time and again in the remaining summer months to push the maximum number of Militants across. Inspite of best efforts, to intercept them, some will definitely succeed in getting in, along the hundreds of mountain trails. The aim of the Militants is to keep the pot boiling and to settle down to a protracted war of attrition.

SUGGESTED SOLUTION OF THE KASHMIR PROBLEM

The Kashmir issue between India and Pakistan is not settled and the problem remains. The situation in Kashmir as of today is indeed very serious and it is ready for a "sudden snatch". If India lets the drift continue and fails to act decisively Kashmir will secede. India cannot let this happen because it will trigger off fissiparous trends through out the country which in turn could wreck havoc to the edifice of the nation state. India should, therefore, make it clear to the Kashmiris and to Pakistan that under no circumstances will it accept secession or independence of Kashmir and the status-quo there will be maintained to ensure that the unity and integrity of the rest of India is not compromised.

A new Government has now been installed at the Centre. It will have to use imagination and face realities on the ground. It must recognize that there have been errors in the past and should now evolve a bold and a positive response. It will be most desirable that the response is formulated in consultation with the other Opposition parties and projected as a national

policy rather than a party policy. The policy should tackle the existing problems with clarity and resolve.

Pakistan has tried to solve the Kashmir problem in the past by opting for wars in 1948 and 1965 but failed. Its aim remains to liberate Kashmir and annex it; and to achieve it, it has now opted for a Low Intensity Conflict, keeping the full fledged military action as the last option. Pakistan launched this operation in 1986 but has not succeeded to the extent it expected. India, therefore, still has a chance to contain the dangerous potential of the existing situation.

LONG TERM SOLUTION

Kashmir will not be a problem anymore if India is able to negotiate a solution with Pakistan. It will not be easy but efforts must continue. The negotiations will be under the Shimla Accord of 1972 and carried out bilaterally. The pace will be painfully slow. At times there may be no progress at all because Pakistan might harp on the out dated four decades old U.N. Resolutions or digress on some other irrelevant grounds. India should not lose patience but continue the efforts projecting that the status-quo will have to be maintained and they are quite willing to accept the Line of Control as the international boundary with minor modifications.

SHORT TERM SOLUTIONS

Steps must be taken in all spheres of activity almost immediately to remove the legitimate grievances of the Kashmiris. If India is able to improve the ground situation and contain militancy, the negotiations with Pakistan will progress faster. India in fact has no choice but to implement the steps suggested in the succeeding paragraphs at the earliest, notwithstanding the adverse reaction of various quarters from both within and without. The existing challenge has to be met on four fronts; diplomatic, political, economic, and administrative.

DIPLOMATIC FRONT

India has always believed in peace and has done its best to restore it in the South Asian region whenever there has been a conflict. Lately this image has been somewhat distorted because of its allegedly poor human rights record in Kashmir. With a renewed effort India needs to convince the world public opinion that she wants to restore peace in the region and wants to normalise its relations with Pakistan. It should also permit the visit of foreign journalists and others who want to visit Kashmir. India can convincingly put across its case to the visiting dignitaries that she is forced to take harsh measures in Kashmir because of Pakistan's training the militants and pushing them across with all the weapons and ammunition etc. and the money to destabilise that part of the country. It can also highlight the

manner in which the militants are keeping the rest of the population in Kashmir at ransom and put across that such elements will have to be eliminated to ensure territorial integrity of the country and the safety of Kashmiris. The sub-committee of the U.S. House of Representatives, headed by Mr. Stephen Solarz, has warned Pakistan that U.S. law forbids any assistance to a country extending external support to groups engaged in terrorist activities. The Committee has specially urged Pakistan to "take appropriate steps to assure the Government of India" in this regard. This belies the Pakistan claim that she is only giving moral support to Kashmiri secessionists. India needs to give an ultimatum to Pakistan that she must stop training Kashmiri militants and stop giving them material support immediately, and if she does not, India will be free to reciprocate the compliment and back the Pakistan secessionists in Sind and Baluchistan.

POLITICAL FRONT

The militants want freedom and do not want to tolerate Indian domination but there are a large number of common people who are still not with them fully. These people must be identified, given protection and their representatives brought around for a dialogue.

The Kashmir government must discriminate between the unarmed demonstrators and the armed militants which they have failed to do, so far. Unarmed demonstrators must be allowed to protest otherwise they will get pushed into the militant camp. In this manner the militants hopefully will lose their mass base which was unwittingly provided to them by incorrect handling by the Administration.

There are a large number of groups which have come up in Kashmir, fighting to secede. Some of these are pro-Pakistan who would like Kashmir to become a part of Pakistan after secession whereas the others are fighting for an independent Kashmir. Distinction must be made between the two. The Government while containing the pro-independence groups, must concentrate initially to eliminate the others at the earliest. The pro-independence groups can be tackled later.

Kashmir by and large has not seen a free and a fair election (except in 1977) and there has been a continuous erosion of the electoral process. The Kashmiris have been denied the normal democratic channels to protest against the alleged state repression and they resent this denial. Ruling party in Delhi has always installed their porteges to head the State Government who in turn have been able to prevent the growth of any worthwhile opposition forces. Political process must be activated again. The National Conference inspite of its bungling still has an appeal. It should be encouraged to start functioning and its cooperation sought. New and younger leadership must be encouraged to come up and the discredited old guard

got rid of by due democratic processes. The opposition parties must be encouraged and also allowed to have a dialogue with the State and Central Governments. It will change the present climate and when the situation is reasonably under control the state and parliamentary elections could be held. The elections must be totally free and fair.

The Central and State Governments must put across the details of various events and happenings in J & K truthfully. They should also counter the political propaganda of the Militants and expose their misdeeds. It will help to wean away the silent majority from the path of separatism and terrorism.

RESHUFFLING THE POPULATION PACK

(a) Abrogation of Article 370 now or later is debatable. Even if desirable its abrogation at this point of time will be most inopportune. The mixing of the population in Kashmir to a limited extent is, however, desirable. The aim of this mix is not to convert the valley into a non-Muslim majority area but essentially to have a few loyal citizens located in sensitive areas who can provide necessary help and support to the thousands of Kashmiris who should want to do nothing with the Militants. Strong presence of such citizens in the militant dominated areas will also be necessary to ensure that the Administration is helped in establishing its authority there effectively.

(b) The Dogra ex-servicemen of Jammu and other areas of the State, who are already the citizens of J & K, should be given attractive incentives in terms of land, houses and money to start farming or a business provided they agree to move to the valley in pre-selected areas to start a fresh life after retirement from the Defence Services. These incentives have to be very attractive to ensure that a large number of Dogra ex-servicemen do volunteer. There will be resistance to this move from every conceivable quarter and Pakistan will cry itself hoarse and call it colonisation of the valley but notwithstanding that this step must be taken and the population of the valley re-shuffled to a limited extent. Countries ensure their territorial integrity by hard decisions and India cannot be an exception.

ECONOMIC FRONT

This State must be opened to the private and public sectors in a big way in the valley to ensure that the area is developed and at the same time large employment avenues are opened for the Kashmiri youth.

Every educated young man in the valley must be provided a job in the para-military forces, public sector or banks etc even if he is not fully qualified. The few will thus be absorbed in the State itself but the others

must be given an opportunity to serve outside Kashmir in the rest of the country.

Unscrupulous businessmen must be got hold of and duly tamed by the law enforcement agencies. Corruption which has become a way of life must be eradicated and Government facilities of loans etc extended to all deserving individuals who genuinely want to expand their existing businesses or start new ones.

ADMINISTRATIVE FRONT

Restoration of effective administration has to be the first priority. Capable officers and men must be posted to the right places and if they are not readily available, they must be brought in from other parts of the country. This process has already been initiated but needs to be stepped up further.

There should be no discrimination. All Government employees whether Muslims or others must be treated alike. Their problems and problem of other citizens must be tackled in an enlightened manner and a liberal approach adopted. In fact Kashmiris will respect the law if it is enforced without fear or favour and they have an agency to which they can go to with their grievances.

CONCLUSION

The situation in Kashmir is critical. Pakistan through the Militants there, is threatening the integrity of India. If the secessionists are allowed to succeed in Kashmir it will affect the stability and secular culture of India and it cannot let that happen. Indian State is strong and powerful enough to meet the challenge and if required will go to war with Pakistan. There is no way India will lose Kashmir. Ms Jamit Mullins, US Assistant Secretary of State for legislative affairs informed Mr. Solarz about the U.S. Administration's stand on plebiscite and she wrote, "it is the Administration's position that the plebiscite mechanism outlined in the U.N. resolutions was over-taken by the Shimla agreement, which we believe provides the best framework for a resolution of the Indo-Pakistan dispute over Kashmir". It vindicates the Indian stand that nobody can change the status-quo in Kashmir and its future is inextricably linked to India. India must, however, attend to the grievances of Kashmiris, look after their interests, root out corruption and provide an effective administration in the State which should be fair and impartial towards all. Political activity must be revived and free and fair elections held to throw up genuine indigenous leadership. A true democracy combined with a sound knock on the heads of the Militants will certainly deliver and go a long way to restore normalcy in Kashmir.

Conventional Arms Control, Arms Transfer, and Conflict Models for the Third World in Western Literature with Emphasis on South Asia (up to 1979)

PART - I

DR NISHA SAHAI-ACHUTHAN*

INTRODUCTION

The first part of this paper includes a survey of the efforts at restricting arms trade and formal measures for arms control, both general and regional, adopted within and outside the United Nations. The second part is a content analysis of the contemporary literature on arms trade, with reference to the analytical tools, scope and purpose of these studies and the supplier-recipient patterns of arms transfers. It critically reviews the methodological approaches and conceptual models of two significant works on this subject, the MIT and SIPRI studies. Within the framework of the models discussed in these works the emphasis throughout in this paper has been placed on the South Asian case -- both in terms of evaluating the study of South Asia undertaken in these works, and also in testing and applying some of these models to the South Asia region within different time frames.

The scope of this paper extends only to the discussion of conventional arms, which are generally defined as weapons used in conventional, non-nuclear wars.

Hence, all references to arms transfer, arms race and arms control in this paper relate to conventional arms, excluding nuclear, chemical and biological weapons. Furthermore, the analysis in the paper is confined to the Western literature containing models for the Third World, which have been applied to the South Asian case or to case-studies of South Asia in such literature. This was done for the following reasons, (1) This is probably the first comprehensive survey of such literature with the focus on the South Asian region; (2) The aim was to examine the range of Western perspectives on such issues in relation to the Third World in general and to South

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Asia in Particular, and to touch upon the South Asian, especially Indian perspective on these issues only when necessary. Here again, since the study was confined to the relevant Western literature, no attempt was made to include the vast Indian and Pakistani literature on these and related issues. As for the time-frame, since this paper was written in 1979, both the literature reviewed and the case studies for South Asia, are until that year. Nevertheless, the literature of the early seventies reviewed in this paper continue to remain seminal works on this subject. In its application to the South Asian case study the data has been updated.

EARLY EFFORTS AT RESTRICTING ARMS TRADE

The urge to acquire weapons by smaller states as a means of defence, security and prestige, and the trade in arms by the stronger and bigger powers as instruments for extending their influence, date back to antiquity. For centuries Arab slave traders used guns and ammunition for buying slaves, and in fact the regulation of arms trade became a subject of international concern and negotiation mainly around this, leading to the Brussels Act of 1890.¹ Despite the advantages accruing to the European powers engaged in arms trade, several states did from time to time undertake steps to license the export of arms, as early as the 16th century, and also to impose restrictions on disclosing or transferring their weapons technology.² The motivations behind the multilateral agreements reached by the Europeans powers on these issues were not entirely altruistic, and stemmed basically from their desire to keep these beyond the reach of the East-African countries.

The twentieth century, particularly the pre and post-World-War periods witnessed a spate of writings on the role of armaments arms race and arms control.³ In the 1930s the Nye Committee hearings and the neutrality laws led to further controls on arms exports by the Western powers. Significant efforts for checking the inter-war arms trade were made within the framework of the League of Nations, particularly in the form of their annual publication entitled the "Armaments Yearbook". These efforts were directed towards (i) analyzing and quantifying on a cost basis, arms-transfers; (ii) publicising such arms transfers and the morality thereof; (iii) defining what weapons were dangerous to international peace and limiting their production; (iv) restricting activities of private arms manufacturers, and bringing arms product under Governmental control.⁴ However, the failure of the Geneva Conference of 1925 to come to an agreement on regulating the arms trade, and of the Disarmament Conference of 1933, damped international interest in this issue for several decades.⁵

The sixties witnessed an upsurge of interest in the U.S. on the issues of their role as an arms supplier, particularly in the wake of the Vietnam

war, and the crises in the Middle East and the Indian sub-continent. Critical examination of the U.S. role as an arms supplier, its responsibility for the use to which these arms were placed by the recipients, and particularly its role in the outcome of Third World conflicts, which were discussed in Congressional hearings, further crystallized public opinion on these issues. Between the mid-60s and mid-70s, the annual pace of international arms transfers had more than doubled, and of this the U.S. had exported as many weapons as all other nations combined. Despite this, no substantive measures for international action were forthcoming an account of the following reasons: (i) Other than the (shortlived) interest shown by the Carter Administration, the U.S. had not come out with any specific proposal earlier, but for isolated actions of arms embargoes. (ii) Since the Soviet Union did not favour any special measures an arms trade outside the general disarmament negotiations; the U.S. was obviously reluctant for a long time to take any unilateral measures on these issues. (iii) The strong resistance by the Third World countries to arms control measures being imposed on them.

PROPOSALS FOR ARMS CONTROL MEASURES : GENERAL AND REGIONAL U.N. PROPOSALS

U.N. PROPOSALS :

The post-World War period had however witnessed the consideration of at least some proposals for arms control. The consideration of these were firstly general proposals, within and outside the framework of the United Nations and also those relating to regional arrangements.⁶ Within the United Nations, the U.N. resolution of December 14, 1946, had called upon the Security Council to bring out the kind of information which member states were required to supply about armaments etc. In February 1947, the Security Council had set up the Commission for Conventional Armaments (C.C.A.) but because of its limited success if not failure it was dissolved in 1950. As for the proposals put forth by member delegates, within the U.N., there was one placed by Malta in November 1965 (defeated), which was followed by that of Denmark, (in 1967). The latter was formally presented in November 1968, and was co-sponsored by Norway, Iceland, Malta, Canada, Finland and Sweden. The Maltese proposal, which was of a general nature met with luke-warm response not only from both the super-powers but also by some non-producers.⁷ The Danish proposal reiterated the points raised in the Maltese one, and in addition called for the member states to deem it obligatory to register all transfers of conventional arms. The Danish proposal was considered discriminatory to the smaller powers by the delegates of Argentina, UAR, Pakistan and India, who opposed it. Their views and reactions to this proposals -- in a way reflected the general tenor of the stand of the smaller states towards such measures.

NON-U.N. PROPOSALS

Outside the U.N., a significant proposal was put up by the Committee on Defence Questions and Armaments of the West European Union (WEU) in 1969, calling for (i) the limitation of armaments in general (ii) and limitations of trade of heavy modern equipment. Not much came out of this, since the Council of the WEU noted that an effective agreement would be very difficult to reach, in view of the attitude of the recipient countries and because of the lack of full support of the supplier states. Other than this, proposals have also come up for regional arms control measures, both in a general form and by way of specific suggestions for particular regions. The general problem of "regional arms supply regulations" has been taken up in the course of the Disarmament Conference in Geneva and also by the U.S. in other forms. One example was the message of the U.S. President Johnson to the ENDC Conference of 1966; the U.S. delegate's position, summed up the U.S. stand as follows (i) the U.S. supported regional agreements between states, for limiting both indigenous production and imports; (ii) the initiative for this should come from the regional states themselves, but should also include undertakings by potential suppliers to respect these regional arrangements. These views have been reiterated consistently by U.S. delegates both at the ENDC and CCD.

Soviet Union's views were reflected in a memorandum of July 1968, in which it stated that the Soviet Government supported the proposals concerning implementation of measures for regional disarmament, and for reduction of armaments in various parts of the world, including the Middle East. Proposals for arms limitation for specific regions, particularly the Middle East and Latin America too had been put up from time to time, both in official and non-official forms. In November 1965, the Committee on Arms Control and Disarmament of National Citizen's Commission dealt with the question of conventional arms race in the developing countries in a separate section, along with the following observations: (i) Regarding suppliers-controls, it noted that the past record of both U.S.A. and USSR was bad; (ii) Regional states should be encouraged to explore possibilities of regional agreements; (iii) The agreements should be sought through the U.N. to limit the sale and acquisition of conventional arms; (iv) monitoring system be established in the U.N. to record the traffic in arms.

U.S. PROPOSAL OF 1977: CONVENTIONAL ARMS TRANSFER (CAT) TALKS

In the U.S. in the early seventies, the authorisation of military assistance came to encounter growing opposition within the Congress, which had been unhappy with the military aid policies of the Administration, all of which together led to the enactment of the Foreign Assistance Act of

1971. The Senate too had been extremely critical, and in 1972 for instance, it was reluctant to sanction funds for military-base agreements with Portugal and Bahrain, unless these were submitted to the Senate for approval as treaties. In 1976, the U.S. Congress enacted a new legislation called the "International Security Assistance and Arms Export Control Act," through which it acquired greater prerogatives to oversee U.S. sales of arms. President Carter's pledge to reduce the level of U.S. foreign military sales, as part of his campaign for the Presidency, was followed up by some concrete action. He announced on May 19, 1977, the new U.S. policy to view arms transfers as an "exceptional foreign policy instrument", to be used only in instances where it could be clearly demonstrated that these contributed to their national security interests. This new policy announcement also established additional guidelines for restraining U.S. arms sales. Along with this, President Carter also stated that "the virtually unrestrained spread of conventional weaponry threatens stability in every region of the world". He expressed concern with the "spiraling arms traffic" and indicated that actual reduction in the world wide traffic in arms would require multi-lateral cooperation.

For achieving such co-operation, the U.S. began negotiations with Moscow in late 1977. In 1978, the two sides held three rounds of talks on finding out ways to control Conventional Arms Transfers (CAT talks). At the May 1978 session in Helsinki, the Soviets agreed with the U.S. that unrestrained arms transfers are a serious and urgent problem which should be dealt with in a concrete way. The fourth such round of talks was held at Mexico in December 1978, with the purpose of affecting arms restraint in two specific areas -- Latin America and the Sub-Sahara. As regards the Soviet response, while the interpretation of the U.S. State Department was that the Soviets had reversed their "totally negative attitude" towards working out agreements on arms sale, the reaction in the U.S. press was not very favourable.⁹ Despite the Soviet willingness to negotiate, Gromyko had stated that Soviets would insist on that weapons-sales-control be based "on the legitimate interests of people fighting against aggression for their freedom and independence"¹⁰ This, as another U.S. journal editorially stated was a way by which "the USSR is stalling the U.S. in its typical routine of endless, fruitless discussions, and pouring arms into every trouble spot..."¹¹ The point this argument seems to have missed however is, that in the Joint Communiqué, following the round of talks in May 1978, *both* the U.S. and the USSR had reaffirmed their belief that the problem did require "full consideration of the defence needs of recipients".

By about mid -- 1978, there was considerable pressure on the U.S. Administration from various quarters within, to reassess its unilaterally adopted arms restraint policy. They pointed to its overall futility, for lack

of follow up action by other states, which in effect had become alternate sources for arms supplies to former U.S. military aid recipients.¹² In November 1978, President Carter announced a cut-back in the export of arms, to countries not allied with the U.S. He, however, declared that his decision on U.S. arms transfer levels for the fiscal year 1980, would depend on the degree of cooperation from other nations with evidence of concrete progress on arms transfer restraint.¹³ It was against this background that the fourth CAT meeting of December 1978, held in Mexico, had ended in a virtual deadlock. The CAT issue did not figure significantly in the Carter-Brezhnev summit meeting, other than by way of a reference in the final communique that "the two sides had agreed to meet promptly for the next round of negotiations". The fact that not much progress has been made in this direction since then is not surprising more so in view of the developments in the geopolitical environment, and the U.S. policy announcements of both the Carter and Reagan administrations, an arms aid offers to Pakistan and other countries -- much of it coming in the wake of the Soviet military intervention in Afghanistan.

CONTEMPORARY LITERATURE ON ARMS TRADE

Systematic and comprehensive studies on this subject had begun to appear only in the late sixties, with the momentum kept up through the seventies and thereafter in 1968, two significant book length studies appeared by George Thayer and Lewis Frank.¹⁴ Thayer gives an extensive coverage of the arms trade, taking the U.S. to task for their role in this respect. Frank's study is more systematic and methodological, in that he analyses the demand for arms the principal arms suppliers' and secondary suppliers' methods of arms supply, and finally models for arms control -- both multilateral and unilateral. However, the first major and systematic work in this field was undertaken by the Arms Control Project of the Centre for International Studies, M.I.T. in the form of seven reports published in 1970. Significant work in this direction was done by the Director of the project Lincoln Bloomfield and his principal collaborator Amelia C. Leiss, who focussed their research during 1965-70 on the developing regions of the world and issues of regional security, arms transfer and arms control. For purposes of this paper the MIT study entitled "Arms Transfers to Less Developed countries", by Amelia Leiss, Geoffrey Kemp et al, is particularly relevant.¹⁵ This study deals with the patterns of arms transfers - quantitative and qualitative - with 52 developing countries, along with an analysis of long-term trends and recommendations for arms transfer and conflict control. This was proceeded by another study by Amelia Leiss along with Lincoln Bloomfield, on Arms control and conflict control in Developing countries (1967).

In 1970 Bloomfield, Gearin et al brought out another interesting study on conflict control in regional conflicts and the U.S. role by simulating hypothetical crises and using the "CONEX" games as planning tools.¹⁶

Two well-known Institutes in West Europe which have done significant work in compiling data on arms Transfers are the Stockholm International Peace Research Institute (SIPRI), and the International Institute for Strategic Studies, (IISS). The SIPRI study entitled "*The Arms Trade with the Third World*" (1971), covers 91 countries within the 1950 to 1969 time-frame, and attempts at quantifying the arms trade on a cost-basis, in contradistinction to the numerical-weapons-transfer-basis. Its opening chapter deals with proposals for arms control, followed by an account of the arms sales policies of the world's 13 big suppliers, along with an analysis of the economic pressures for export. It undertakes a similar analysis of the policies of the major recipients region-wise, and also the domestic defence production of many of these countries. The IISS too has done significant work in this direction in the form of its publications--. The *Military Balance, Strategic Survey* and the *Adelphi papers*.¹⁷ Again, a book length study undertaken by two of its scholars, Stanley and Pearton, entitled *the International Trade in Arms* (1972, Praeger) deals with arms trade and controls, the sale of arms, and the imperatives of economic pressures for such sale. The last part deals with specific cases of embargos in different regions of the world.

As for other agencies, the U.S. Arms Control and Disarmament Agency (ACDA) brings out its periodical report reviewing U.S. and multilateral measures for arms control. It also brings out another compilation *World Military*.

Expenditure and Arms Trade. For the purposes of this study, the ACDA publication entitled India and Japan: *The Guessing Balance of Power in India and Opportunities for Arms Control 1970-75*, (ACDA/IR-170) focussing on arm control prospects in South Asia appeared particularly relevant. As for comparable compilations by the United Nations, while there is considerable literature available on disarmament in the form of year books, not much has been done in the field of regional arms trade, arms control etc. A compilation entitled *Economic and Social Consequences of Arms and Military Expenditure*, (1978) was found to be particularly informative. The International Peace Academy, New York had brought out an interesting compilation, *Regional Colloquium on Disarmament and Arms Control* (proceedings of a seminar held at New Delhi in 1978). The Rockefeller foundation too had brought out a compilation entitled *World Social and Military Expenditures, 1977*. For creating a consciousness for the need for arms control and Disarmament at the international level, salutary work has been done by the PUGWASH annual conferences on Science and World

Affairs for several years now. It has not only provided a useful international forum for discussion of some of these problems but has also come out with excellent compilations in the form of its annual reports and quarterly newsletters. One of the working committees at their annual conference invariably deals with arms control in non-nuclear fields and also with the security of the developing nations.

As regards studies on arms transfer and arms control on a regional basis, several articles and book length studies have appeared from time to time.¹⁸ For significant book-length marks on regional arms transfers, the ones by Catharine McArdle, Jashua and Cibart, and Uri Ra'anan deserve mention.¹⁹ Two significant works on issues relating to arms trade and conceptual models for arms control are by Robert Harkavy (1975) and Anne Cahn, et al, (1977).²⁰ Harkavy focusses on a comparative study of the weapons market both in the inter-war-years (1919-30) and in the post-1945 era. Harkavy's methodological approach, as he puts it, is based on the MIT study (by Amelia Leiss et al), but in addition he further breaks down the subject into "such component segments as donor-recipient-patterns, transfer modes and the relative modernity of weapons transferred". In the MIT study he says there was "no attempt made at explaining the patterns evidenced by reference to system characteristics nor was there any attempt to co-relate these patterns with other measures of international association, such as alliances."²⁰

The inadequacies of some of the earlier works on arms trade and arms control, it appears, stemmed from their failure to deal with the complexities of the phenomenon and with the essentially systemic nature of the problem. For instance, what was required in the context of arms control was not just determining the inter-relation between arms transfers and international conflict, but in evolving for example a more sophisticated analysis of the motivations and constraints of the two sets of actors -- the suppliers and the recipients. These are precisely the issues addressed in subsequent works such as those of the SIPRI, MIT, of Markavy, and more particularly of Anne Cahn et al. This paper aims at examining some of these theories/patterns of arms transfer and the conceptual models for arms control, from the view points of both sets of actors. The issues discussed herein further, include some of the basic assumptions underlying the entire debate on arms control -- representing the view-points of both sides -- along with an examination of the dimensions of such controls.

(To be continued)

NOTES

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- 5-A. *Controlling the Conventional Arms Race* (CCAR), brought out by the UNA-USA Policy Panel on Conventional Arms Control, 1976, p. 53.
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7. The Maltese proposal was general one, and in particular called for an effective system of publicity in arms transfers.
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Air Headquarters Communication Squadron: Their Finest Hour

AIR VICE MARSHAL S S MALHOTRA, AVSM, VM (RETD)

Air HQ Commn Sqn, usually called as the VIP Sqn, came into existence at Palam soon after independence and was formally raised on 01 Nov 1947, from where it continues to operate till date - its role being to convey by air national, service as well as foreign dignitaries within as well as outside the country. It is the Indian equivalent of Queen's flight in England or Presidential Flight of US Air Force. Depending on the availability of the national resources and its operational commitments, it is equipped with various types of aircraft from time to time. The personnel to maintain and fly these machines are specially selected and trained for the role. The Squadron has grown from its humble beginnings to its present stature and has the singular distinction to be uniquely associated with the momentous and historic occurrences of national/international importance unlike any other military, para-military or civilian outfit.

The role and salient features of the Squadron have been depicted piecemeal from time to time by press and publicity, various anecdotes narrated by individuals and basic data recorded; whatever gets highlighted or recorded for posterity is not even one percent of total achievements - be it its aircraft serviceability rate, aircrew qualification state, resource and time crunch, punctuality and quality of service to its patrons, the operational or routine service tasks during peace and war or simply its flight safety record and flying discipline. It is neither possible nor practicable to record every activity of whatever consequence - positive or negative - but the posterity has the 'knack' of retaining whatever is worth retaining and consign the rest to the traceless forgetfulness. Thus it is the 'worthy' milestones during one's existence which can enlighten the posterity.

In historical perspective 43 years is considered as recent history and may not cover even a single page. However, significant landmarks of historical value eke out a niche for themselves in the archives. To that extent, 43 years of existence of VIP Squadron are no exception and have attained more than what would have normally accrued by virtue of its unique role and extraordinary performance. In military traditions, the significant landmarks are generally confined to calendar based events like attaining 'majority' 'Jubilees' 'centenaries' etc. and major operational events leading to recognition of service/distinguished existence culminating in presentation of Presi-

dent's Colours - the honour which was conferred on the Squadron in Dec 84 i.e. after completion of 37 years of distinguished peace/war time civil and military operations.

In its usual role and routine operations, the VIP Sqn has had the unique privilege of flying a wide spectrum of VVIPs, including Governor Generals, Presidents, Prime Ministers, renowned statesmen, luminaries, diplomats and military personalities, who have been involved closely in the making of history. To this extent, the Squadron is perhaps like none other in the IAF. At its inception the Sqn started functioning with only eleven aircrew, one engineering officer, an adjutant and a handful of SNCOs/airmen. The Squadron motto originally was "Ba Himmat Hikamat Aur Hifazat" (with courage, wisdom and safety). This was changed to 'Raksha Mulam Hikkaushalam (Protection through Skill) in 1962. Finally the simple, yet expressive 'Seva aur Suraksha' (Service and Safety) was chosen, along with the Pegasus as the motif for the Squadron Crest, which perhaps best sums up the concept underlying the Squadron's present day operations.

The Sqn commenced its operations with Airspeed Oxford aircraft. In March 1948 De Havilland Devon was inducted in the Squadron and Oxfords were withdrawn during December same year replaced by versatile Dakota - one of them being pressurised. In 1955, the Meghdoot, IL-14, presented by the Soviet Union, joined the Sqn and during the next year the Sqn entered the realm of nobility when the VISCOUNTS were inducted. In 1964, the Sqn received the first Indian built transport aircraft i.e. HS-748. The Sqn entered the jet age in 1966 with the arrival of TU-124. The Sqn maintained its penchant for keeping pace with the state of the art by acquiring the Boeing 737 in 1981 on phasing out of TU-124s. A long felt need was met in 1984 with the induction of rotor craft i.e. MI-8 Helicopter - thus ushering in a change to the Sqn's fixed wing image.

Over and above the routine operations of conveying VIPs/VVIPs, the Sqn is fully committed to other peace time operations e.g. Aid to Civil Authority and Assistance to United Nations and Neighbouring countries. These operations include operation of civil aircraft to maintain essential services, flood reconnaissance, relief and rescue operations during natural calamities and disruption of communications, airlifting of para military and military forces, participation in military exercises, mail runs and currency airlifts, rendition of medical aid in the form of airlifting doctors or patients, medicines and medical equipment, election campaigns, airlift of UN Peace Keeping Force to Indo-China in 1954, flood relief and counter insurgency operations in Sri Lanka, Recce and casualty evacuation in Nepal including secret evacuation of King of Nepal, evacuation of Dalai Lama, tours of UN Secretary General over the disturbed Indo-Pak border areas, tours

of President of World Bank, evacuation of prisoners of war from Pakistan and Bangla Desh.

During its participation in military operations, the Sqn was fully committed in its role in Hyderabad Police Action/J&K operations in 1947, GOA operations in 1960, the Chinese Aggression in 1962, Indo-Pak conflict in 1965, liberation of Bangla Desh in 1971 and IKPF operations in Sri-Lanka. The details of the actual tasks carried out during these operations are classified 'secret'. All these military and non-military operations being considered as normal routine the Sqn also has some pioneering activities and outstanding achievements to its credit.

As a matter of routine the Squadron maintains exceptional standards of professional knowledge, flying skill and maintenance practices - its personnel being the most highly qualified in the IAF. While talking about the flight safety standards and records, one cannot be too boastful - we have to keep our fingers crossed - yet the Sqn can justly and humbly claim the lowest accident rate in IAF throughout its over four decades of existence. The Sqn had won the coveted flight safety trophy and barred from competing again lest the trophy found the its permanent abode. This is so because of the Sqn's work ethos. No aircrew or maintenance personnel gloat over what exceptional things they have done. They are all encouraged by personal examples to frankly highlight and analyse their 'near misses', mistakes and failures, seek guidance and assistance as required, constantly update their professional knowledge and train themselves upto near zero error performance; which is constantly and carefully monitored by supervisers and seniors - painful but paying procedures.

An aircraft from this Sqn was the first to reconnoitre Mt Everest from close quarters when it was sent on a mission to confirm the conquest of the peak by Sir Edmund Hillary and Tenzing Norgay. The first Dakota to land (in Aug 52) Chushul - the world's highest airfield -- with Pandit Nehru on board; the first IL-14 to land at Lhasa (14,200'); the first Turbo Prop aircraft (HS-74 fitted with pre-modified underrated aero engines) to land at FUKCHE (elevation 13,374') and WALONG - the shortest runway length available - were flown by crew of this Sqn (Flt Lt Roy, Sqn Ldr Rufus and Wg Cdr Malhotra respectively. This is the only Squadron which has carried out trial landings at almost all the semi-prepared, disused, dusty, fair weather, small and unmanned airstrips/field in the country and maintains a record thereof. This Sqn has been the first in the IAF to induct and operate reversible pitch piston engine aircraft(Devon); turbo-prop aircraft (VISCOUNT), a jet transport aircraft (TU-124); an India built transport aircraft (HS-748) and an aircraft of Russian origin (IL-14).

During the course of its exalted existence, the Sqn has bagged some rare honours while fulfilling its tasks. Whilst the roll of honour and those who lead are listed separately, four incidents merit a special reference. In March 1949, an aircraft of this unit referred to as the famous, 'Jaipur Plane' by the press was successfully landed after an emergency, with Sardar Patel on board. This incident brought the Sqn and the pilot involved - Flt Lt KJ Bhimrao - Kudos for skill and efficiency in handling the situation. Even the Constituent Assembly put its appreciation of the pilot on record, amidst applause in his presence - an unprecedented gesture of that august body. Later during those early years, Sqn Ldr Biswas of this Sqn was awarded Ashoka Chakra Class I for successfully force landing a fire raged Devon in a field near Lucknow. On board were four top Generals and two Brigadiers. Sqn Ldr Rufus was awarded Ashoka Chakra Class II and his Flt Engr, Flt Sgt Paddington, was awarded Ashoka Chakra Class III for successfully force landing on IL-14 carrying Pandit Nehru at Raichur, after an engine fire had occurred. Flt Lt Ravindran, an undertraining flight engineer and Cpl Upadhyaya, a member of the ground crew were awarded Shourya Chakras (erstwhile Ashoka Chakra Class III) for successfully evacuating the Prime Minister and his entourage from the ill fated TU-124 crash at Jorhat. In addition, the Sqn personnel have been awarded 16 Vayu Sena Medals, 4 Vasisht Seva Medals, 30 Commendations by Chief of the Air Staff and 97 Commendations by the Air Officer Commanding in Chief.

For all its achievements, the Squadron's finest hour came on 11 Dec 84 - the fateful year in country's history otherwise - when the Sqn was bestowed with the honour of receiving President's colours at Palam, its bastion of operations since its inception. IAF was in the process of re-equipping its transport fleet on a large scale, which created indirect pressures on this Sqn in terms of parting with trained manpower - both aircrew as well as ground crew. This affected in Squadron's own training commitments. In addition the helicopter flight had to become functional on permanent basis. The other flying units on the base were also experiencing somewhat similar problems. The base itself was having commitments of a magnitude and nature which had never been experienced in its past history. Under such circumstances, the base draws heavily on its lodger units to meet the enhanced manpower requirements - and Air HQ Comn Sqn had to bear the maximum brunt being the largest unit.

The problems referred to above were peculiar in nature having national/international importance and ramifications. Rising terrorism and insurgency resulted in operation Blue Star. The station had to gear up for meeting the tasks in connection with this operation ranging from mounting military/para military missions to missionaries for political parleys and

consultations, followed by VIP, VVIP flights during the post operation 'Blue Star' period. Ultimately the date for colour presentation to the VIP Sqn was tentatively scheduled for end of Nov - but this was not to be since the country faced a national calamity in the assassination of its Prime Minister. The terrible event brought in its wake two major tasks that the station and Sqn had to shoulder. The station had to make arrangements to receive over sixty foreign aircraft and dignitories (observing full protocol formalities) who rushed to Delhi to attend the Prime Minister's funeral. Soon after this task was over, the Sqn had to gear up for the mid-term poll entailing 350 sorties /227 flying hours out of a total of 1413 sorties/ 1612 flying hours for the last quarter. -- on all types of Sqn aircraft i.e. Boeing 737, HS-748 and the MI-8 helicopters - a single crew logging as many as 13 sorties in a single day. All this was being done with reduced and disturbed manpower because of the unsettled and riotous conditions during the post-assassination period.

Amidst all these happenings, the date of colour presentation got postponed and was fixed for 11 Dec 84. The squadron had to provide major share of parade personnel and prepare for its command. The station had to make all out efforts to make the historic function a grand success and also look after No 9 sqn which moved from Srinagar to Palam for receiving colours during the same parade.

It is difficult to describe the grandeur with which all functions culminated. There are any number of press Clippings, photos, videos & documentaries to depict the events and their state of exactitude and excellence. from everyone else's point of view, this was an enormous effort, but for the VIP Sqn it was taken in their usual stride-because they were not spared from their onerous routine of carrying VIPs even on a day the highest honour was being conferred on them. They launched a Boeing 737 carrying Prime Minister of India to Ambala-Lucknow at 0815 hrs when the Presidential Salute was at 0930 hours; Normally such situations should be avoided as disregard for Sqn's sentiment could generate some heart burn, but VIP sqn personnel believe in the dictum ' Success is the best revenge."

This was their finest hour - whilst the squadron's past was being placed on the high pedestal of history yet it continued to live through its arduous & onerous performance unmindful of the festivities that generally get generated during such occasions. One can wish 'happy landings' and 'luckystrokes' to such blokes' who are destined to make their own history worthy of reverence by the professionals & posterity, by cultivating skills, undergoing stoic wait and making sacrifices to maintain the prescribed standards of \pm 15 seconds punctuality!

The Battle of Sangshak 19/26 March 1944

50th Indian Parachute Brigade

BRIGADIER L F RICHARDS, CBE (RETD)*

By Late February 1944, the Japanese Army in Burma - its sights firmly fixed on Delhi - was preparing to take on two important objectives before breaking through into India; Imphal with its airfields, vast dumps of arms, stores and vehicles which they desperately needed, and 70 miles to the North, Kohima, a key point en-route.

Whilst HQ's XIV Army was preparing for the main thrust to develop from the South, the Japanese were bringing up their crack 15th and 31st Divisions to attack from due East.

However, quite unknown to Japanese Intelligence, at the same time, HQ 50th Indian Parachute Brigade, together with their 152(Indian) and 153 (Gurkha) Parachute Battalions, the MMG Company, 411 Parachute Field Squadron RIE, and 80 Parachute Field Ambulance IAMC had been arriving at Kohima, to exercise in jungle-warfare patrolling in a 'threatened area', using mule transport only. Lightly equipped, they were without defence stores or vehicles.

GOC 23rd Division gave orders for the Brigade, with sub-units of the Assam and Kali Bahadur Regiments, to be widely deployed from Kohima down to Ukhru, and Eastwards to the R. Chindwin, to prevent Japanese infiltration.

By 14th March, 152 Para Bn later to be joined by the 4/5 Bn Mahratta LI, had set up a patrol base on a high plateau near Ukhru, with 'C' Company well forward, and in contact with 'V' Force Intelligence posts overlooking the river.

'V' Force were fired upon, and five days later the Japanese savagely attacked 'C' company, which they rapidly surrounded. Only 20 men survived, but 450 enemy were killed.

The Parachute Brigade, less the Assam R. Companies, was then reinforced with 15 Mountain Battery, 582 Jungle Mortar Battery and 74 Field

* The author, at the time, was Brigade Liaison Officer and later 2/i/comd 1st Bn The Indian Parachute Regiment.

Company and ordered to concentrate at the Naga Village of Sangshak, 6000 ft upon the jungle-clad ridges. As the last units wearily marched in, one of the most ferocious and important battles of the Burma Campaign began, and raged on for six days without respite.

Japanese MMG fixed-lines swept the position, their Mortar fire creating havoc. Hand-to-hand fighting with bayonet and kukri took place; suicidal attackers seized high ground near the Church to within 200 yds of Brigade HQ. Defence Platoon, Indian and Gurkha Paratroopers successively counter-attacked. The Gunners, with a 3.7 Howitzer firing over open sights, the MMG Company and the Mortar men adding to the intensity and furore of the battle, losing all three officers commanding.

Air-supply fell wide; mounting casualties could not be evacuated, and planned re-inforcements could not get through. Putrefying bodies of men and mules caused dysentery; precious ammunition, water and food ran out; many thought that Sangshak could not survive, but the Indian Parachute Brigade doggedly held on.

On 26th March, both sides neared complete exhaustion but in Imphal the arrival of the 5th Indian Division had fulfilled the Brigade's mission. At 1830 hrs it was ordered to "fight its way out" back to Imphal. At 2230 hrs a lull in the battle enabled small groups to file away quietly in to the jungle, taking with them their walking-wounded and others on improvised bamboo stretchers; the hazardous trek back taking up to one month.

The late Field-Marshal Sir William Slim, whilst GOC-in-C XIV Army, in the Field on 31st August 1944, in a 'Special Order of the Day' recorded:

"....it was your Parachute Brigade which bore the first brunt of the enemy's powerful flanking attack, and by their steadfastness gave the Garrison of Imphal the vital time required to adjust their defences"

He also wrote in a letter to the Indian Parachute Brigade Association:

"....I shall always remember the days you gained for the XIV Army, at a critical time, by the magnificent stand at Sangshak"

Casualties were high; 585 fatalities, including 40 Officers and Warrant Officers, but the Japanese offensive had been blunted; they lost over 2000 men from which they did not recover.

Review Article 1

The Falklands War of 1982*

LT GEN ML THAPAN, PVSM (RETD)

Human history is replete with examples of the passions which national sovereignty generates, in the breasts of peoples of different nations and their governments. The Falkland Islands conflict of 1982 is a unique example of the extraordinary depth of feelings aroused in the two belligerents - Argentina and Britain. The Argentine flag was first raised in the Falkland Islands in 1820. In 1833, it was lowered by the crew of a British warship and the Islands formally established, as a Crown Colony in 1840. Britain remained in effective occupation for 149 years, till 2 April 1982, when Argentine forces occupied the Islands, (which they refer to as Islas Malvinas), and which the people of Argentina believe, rightfully belong to them. The subsequent conflict saw the Argentine flag again lowered on 14 June 1982, with Britain once more, in charge. The dispute over sovereignty still remains, though some may wonder why it should generate such heat. The Islands, themselves, are inhospitable and inclement. The population in the 1980 census was only 1,849 and declining slowly. The local economy, dependent on the export of wool, is also in decline. The distance from the United Kingdom to Port Stanley in the Islands, is 6,761 nautical miles; whilst that from Buenos Aires to Port Stanley is 991 nautical miles. These distances should give Service Officers some idea of the logistical problems faced by the warring parties.

A unique feature of this book is that it has been written jointly by two people from each of the belligerent countries. Not only have they drawn extensively on the substantial literature which exists on the events of 1982 (the bibliography runs to twelve pages); but they also have had access to original material, including Argentine records not yet available to the public, as well as interviews with key political and military figures in both Britain and Argentina. The result is a completely dispassionate coverage of the development of the conflict from both sides, and an examination of the manner in which the statements and declarations of each side influenced the other. For, this book is not merely a record of the military, naval and air operations - it does not claim to be so - but a fascinating account of the political and diplomatic negotiations on the international stage, which proceeded concurrently with military movements, and are a feature of the world scene, since the establishment of the United Nations. The attempts at mediation by US Secretary of State Alexander Haig, Peruvian President

* Signals of War: The Falklands Conflict of 1982 -- by Lawrence Freedman and Virginia Gamba - Stonehouse, London : Faber and Faber Ltd., 1990, p. 417, £ 17.50.

Fernando Belaunde-Terry and the UN Secretary General Perez de Cuelar are set out in great detail, and show the relationship between contrasting negotiating styles and tactics, adopted by those involved.

The era of gunboat diplomacy having ended, the use of military force in the pursuit of national aims, in today's context, requires considerable finesse. Democratic governments are answerable to their parliaments; they also have public opinion to contend with. The United Kingdom had a very determined Prime Minister in Mrs Thatcher, who carried her people with her in this conflict, with great skill and resolve. Argentina suffered from the handicap of being ruled by a military Junta, where each member had his own ideas as to what should be the next move, and President Galtieri operated under several restrictions. There was no doubt, however, of the feelings of the people in Argentina, but these could not be effectively translated into action by their Government. Apart from domestic problems, the contending countries had to take into account the attitude of their neighbours, their allies, and the world body represented in the United Nations. All this is brought out very clearly and forcefully in this book. The lay reader will find it an education to see how the process of mediation, at the top level works. The United States has ties with Latin America; it is also the major partner in the North Atlantic Treaty Organisation in Europe. Secretary of State Alexander Haig had to chart a very difficult course between the quarrel of two friends. The Argentines felt that he had a tilt towards the United Kingdom; this indeed was so, though Haig did his best to browbeat British functionaries to accept the Argentine point of view. The Peruvian President and the Secretary General of the United Nations also tried, without success. There is an interesting vignette of how voting is sought to be influenced in the United Nations security Council. On a particular resolution having been tabled before it, the British Ambassador to the UN learnt that his Jordanian counterpart had received instructions from his government, not to vote for it, along with the United Kingdom, but to abstain. This was duly reported to London. A telephone call from Mrs Thatcher to King Hussein settled the issue, and the Jordanian representative received fresh instructions, to follow the British line.

Such light diversions amidst a sea of serious narration, are what makes this book so interesting. There is another one, indicative of the mood of the US National Security Council under President Ronald Reagan. Before Haig was commissioned to mediate in the dispute, a National Security Council planning group met to ratify his assignment. According to one participant, "The NSC meeting was rather chaotic and unstructured, in the sense that most of the senior members of the President's party were just about the door on the way to their aircraft to go down to the Caribbean....to visit Claudette Colbert (an actress and friend of the President)".

The grim aspects of the war at sea, in the air and on land, in the context of the use of weapons of high technology, which were available to both belligerents, make one wonder whether force any longer is a suitable medium for the settlement of international disputes. (The recently concluded Gulf war, of course, has brought home the same lessons). The amphibious British assault on the Falkland Islands, at such staggering distances from their home bases, was a marvel of military planning and execution. The key role of intelligence once again is highlighted. All available means; satellite, electronic, radio communications interception, aircraft reconnaissance, information gathered from local inhabitants, prisoners and other sources were pressed into service. The weapon most feared by the Navy was the Exocet missile. The Harrier jump jet aircraft, proved to be a versatile fighter. Helicopters, particularly those capable of carrying heavy loads, were invaluable; so much so that many offensive missions, in the rugged terrain of the Falklands, could only be carried out with their help. Superior technology, numbers and professionalism, won the battle for the British forces.

A final example from this narrative of initiative employed by the Commander on location, despite contrary direction from above. When the Argentines were negotiating military surrender, General Jeremy Moore, the British Commander, was ordered by London to include the term "unconditional" specifically in the surrender document. His military judgement was that this would delay matters and that fighting would not stop. Accordingly, he did not press this terminology and obtained Argentine Submission, in totality, without ignominy attached. This is what singles out commanders from automatons.

This is a work of great scholarship. The academic distinction of Professor Lawrence Freedman and Ms Virginia Gamba-Stonehouse have been used admirably to analyse a major international conflict from a number of angles. The problems of crisis management, international mediation, and those of the conduct of military operations, are set out with great clarity. In their conclusion, the authors say: "The Signals of War are often partial, confused and contradictory. Warnings of imminent conflict can be lost in the general noise of international affairs, explicit threats dismissed as bluster while intelligence assessments are caught in traditional patterns of thought, limited by inadequate information and contained by sheer disbelief that the adversary could possibly resort to violence. Once war begins, the Signals of war become explicit and brutal, tending to drown the subtleties of the original dispute and confound mediators. Britain failed because it did not recognise the coming signals of war; Argentina failed because it believed that these signals could be controlled.

There could not be more convincing proof of the objectivity of this book.

Review Article 2

German Officer Corps in the Second World War*

MAJ GENERAL SC SINHA, PVSM (RETD)

The political history of the German people in the first half of this century is a strange paradox. Here we have an enlightened people, whose contribution to Western civilisation is unmatched by any other nation. It would be difficult to name any sphere - be it in the fields of art, literature, music, the sciences, medicine or any other - in which these people have not excelled and enriched the Western World's proud cultural heritage. Yet it is the same people, who have, in the first half of this century twice plunged the World into disastrous wars of cataclysmic dimensions and in their behaviour reached a nadir of depravity.

It was Frederick the Great, who had once announced - 'In my country every one can worship according to his fashion'. Yet it is the inheritors of his traditions, who cruelly tortured and exterminated, in cold blood, millions of Jews and people of other races labelled to be of an inferior breed. They inflicted on the World the unbelievable horrors of Belsen and Auschwitz. It was again Frederick the Great who had said to his officers - "I did not make you officers only in order to know when to obey, but also to know when not to obey". Yet the same officer corps, proud of their Prussian traditions, produced a galaxy of brilliant Field Marshals and Generals, who against their own better judgement, passively acquiesced to the outrageous and preposterous demands of an unscrupulous power hungry dictator. By so doing they sent thousands of their soldiers to their deaths and their armies to inevitable defeat. And then a German Field Marshal, Keitel, earns the nickname of "Lakaitel" - a lackey.

To explain this great paradox and unravel the mystery behind such inexplicable behaviour pattern would require the life-time research of a Freudian genius. But in his book "Bounden Duty", which are his memoirs of the years 1932 to 1945, Alexander Stahlberg has courageously and truthfully laid out the bare facts of the turbulent events, he was witness to, in a most interesting and readable narrative in which often truth is stranger than fiction. It goes to the author's credit that he has frankly recorded even the most shameful events though many of his compatriots had said - 'Can't you keep quiet about it'. But by keeping those shameful

* BOUNDEN DUTY "THE MEMOIRS OF A GERMAN OFFICER 1932-45" by Alexander Stahlberg, Oxford, Brassey's (UK), 1990, p. 410, £ 17.95.

days under wraps and forgetting those horrorfilled degrading events would only be a sure way of ensuring such infamous history repeating itself, if not in Germany then in some other country. By chronicling the evils of Nazi Germany, the author has surely done his 'Bounden Duty' to the civilized world and an admission of guilt, as in confessionals, can only help in the healing process to clean out the poison injected into the German system by Nazism.

The author, the scion of a rich upper crust Prussian family, gained at an early age much political insight, when in 1933 he was attached to Vice Chancellor Papens office. From this privileged position he was close to the scene of Hitler's rise to power. Not being enamoured by National Socialism and its devious criminal ways, young Stahlberg enlisted as a trooper in the 6th Prussian Cavalry Regiment to avoid being inducted into the Nazi Party. As a junior officer he fought in Poland, France and then in the bitter winter campaign in Northern Russia before being appointed as a confidential ADC to the outstanding German commander of his time, the monumental Field Marshal Von Manstein. From this position of advantage, close to the higher echelons of command, the author ably records the tragic dilemma facing men of integrity and honour, especially in the Army officer corps, in Hitler's Germany. What could a patriot and a man of honour do as the folly of a power crazy dictator, whom they were bound under oath to obey, dragged their beloved country through degradation towards disaster? There were no doubt a few who followed Frederick the Great's words of an officer knowing when to disobey and paid the forfeit with their lives. But then the redoubtable Field Marshal von Manstein himself maintained that "A Prussian Field Marshal does not mutiny".

What, at this distance of time, seems inexplicably strange is that the German officer corps, which tolerated, nay encouraged frank and forthright exchange of views, bordering almost to insubordination, between its officers irrespective of the difference in seniority and rank, meekly accepted the most outrageous orders from Hitler on professional matters purely in the realm of operational planning. Also, inspite of their high moral code, these officers followed an ostrich like stance to the depraved inhumanities inflicted on millions of unfortunate victims by the political troops of the Nazi regime. Perhaps it was the futility of such opposition in the storm of emotion let loose by Hitler and the Nazi propaganda machine that swept through Germany during those unfortunate years. Here in this book at least we have the facts as they occurred though we may not find in it the answers to the conundrums. A very interesting book certainly worth reading.

Review Article 3

India's Security: Challenge and Response*

LT GEN AM VOHRA, PVSM, IA (RETD)

The raison d'etre of this voluminous study is 'National Security' which has been dealt with essentially in three chapters; 9, 10 and 11. Painstakingly researched particularly in its coverage of September 1965 and the 1971 Indo-Pak wars, its singular contribution is the recommendations in regard to "Perspective Planning", "Organisation for National Security" and "Integrated Theatre Organisation", all discussed in Chapter 11. The author sensibly suggests that India should "strive to resolve problems by peaceful means": with Pakistan and that "No effort should be spared to solve problems by peaceful means" with China. At the same time, "the country should develop maximum possible deterrence consistent with its means". He feels that "In case of India, it is not beyond its growing economic strength to achieve deterrence against Pakistan within a reasonable time frame Against China, it will take some time for India to be able to develop a deterrent capability on its own, but this should be strived for". This concept of maximum possible deterrence is questionable. It implies marked military superiority vis a vis ones' likely adversary which is not achievable and leads only to a competitive arms build up. Equally at present, a satisfactory capacity for deterrence exists. Since one is no longer certain of a growing national economy and is reasonably certain of a continuing resources crunch, a streamlining of the armed forces is urgently called for; reduction, for instance, in number of Army divisions and combat aircraft while introducing missiles, AWACS and updating means of EW.

Gen Krishna Rao's observations on the NSC set up by the VP Singh government, which incidentally is not so far a functioning institution, are valid; the three or four tiers envisaged, the JIC as the secretariat and the CCPA as the final authority come in for comment. In addition, the NSC needs a permanent multi-dimensional staff with a high powered Secretary to provide holistic inputs. The Strategic core group constituted of concerned secretaries to the government and the Chiefs of Staff, all preoccupied with multifarious responsibilities, cannot perform this function nor can the JIC, which should be aptly utilized for integrating various intelligence agencies and providing intelligence inputs to the NSC (for use by Secretary NSC and the NSC staff).

* Prepare or Perish - A Study of National Security, by General K.V. Krishna Rao - Lancer 1991 -- pp. 507, Rs. 550.

In considering the "Threat", the author rightly points out that India has followed the policy of maintaining friendly relations but to say that this has "earned it respect in the comity of nations" or that "India's contribution towards peace and program as a member of the UN, NAM, the Commonwealth and the SAARC has been well recognised" is being a bit naive. Unfortunately, within South Asia India is undeservedly accused of hegemony and acting the big brother. Internationally also, there are not many countries which are willing to give India any kudos. This need not dismay one nor, on the other hand, need one be opinionated about one's country as it tends to give the impression of lacking in objectivity.

Without necessarily disagreeing with the author's threat perception, it would be pertinent to raise one or two questions. Could, for instance, Pakistan's nuclear weapon ambition be purely to avoid a situation of asymmetry? Are India and China in competition over leadership of Asia? Both have potential to become nations of influence in their regions; South Asia and Asia Pacific respectively. Their future depends entirely on how they develop their economies and maintain internal cohesiveness.

Gen Krishna Rao's book has made a useful contribution to the study of military aspects of national security and raised some important points regarding integrated command set up of the armed forces and the institutional arrangements for national security. However, he has tried to cover too much in one volume and would probably have been well advised to split his work into two books; one on the military history aspects and the other on national security.

Book Reviews

Military Strategy: A General Theory of Power Control. By Rear Admiral JC Wylie
Australia, Naval Institute Press, 1967.

Admiral J C Wylie presents a general theory of war based on power control. The need arises because of the dissonance between soldiers, airmen and sailors on what constitutes the right strategy. Differences arise mainly because all the three are known to think dissimilarly on the general nature of strategy. A good example is the soldier's Clausewitzian obsession for destroying the enemy's armed forces, while the remaining two Services rely more on control. The theory of control assumes greater relevance because of the rising incidence of Small Wars, wars which are revolutionary or limited in objectives and means.

This slim book is not one about battles but a provocative and free-wheeling conceptual discussion (though very abstract at times) on strategic ideas. Before outlining an alternative strategy, the Admiral cautions the reader on three accounts:-

- (a) One, the vital need for greater openness is discussing and evolving strategy which in many countries is kept close to the chests of a selected few; a case of "intellectual incest".
- (b) Two, the study of 'principles of war' can be misleading. Principles of war are nothing but common sense rationalized. To the author, slavish obeisance of principles of war is a poor substitution for thought. Strategy perforce encompasses wider non-military issues that have close relationship with military action.
- (c) Three, Clausewitz's famous strategy of destruction of enemy forces as the object of war, merits closer examination. This may not always be true for armed forces could have other objectives such as control of territory.

The General Theory of Strategy propounded by the Admiral, a harmony of the essentials of all known strategies, makes four basic assumptions. These are:-

- (a) Despite whatever the effort there may be to prevent it, there may be war. This is the main rationale for having armed forces during peace time.
- (b) The aim of war (as opposed to destruction of enemy forces) is some measure of control over the enemy and his territory.
- (c) While planning one cannot predict with certainty the pattern of the war for which any country prepares itself. This is simply because one cannot safely forecast the time, the place, the scope and the general tenor of any war.
- (d) And lastly, the ultimate determinant in war is the man behind the gun.

Having clearly staked his basic assumptions, Admiral Wylie propounds an alternative strategy - the strategy of power control which rests on two main ideas; the theory of control and centre of gravity.

As far as any aggressor is concerned his aim will always remain one of establishing control over his adversary to be able to compel him to agree to the aggressor's terms, ie political objectives of the war. Should the adversary succeed in blunting the offensive, a sort of equilibrium sets in. However, if the defender fails to reduce the aggressor's initial control of the course of war, he loses. Equilibrium does not necessarily imply halting of military action or a stalemate. In point of fact both sides are jockeying for favourable outcomes, the general situation remaining fluid and dynamic.

At this stage of the combat the only way in which to swing the 'equilibrium' in one's favour is to destroy or control the opponent's centre of gravity. Herein lies the fundamental key to the conduct of warfare. These centres of gravity must be carefully selected for they must be sensitive, "some kind of a national jugular vein".

The book is just over 100 pages, refreshing and readable. Its 'all-service' flavour is commendable.

— Col Arjun Ray, Mech Inf.

The Changing Strategic Landscape. Edited by Francois Heisbourg. *Hampshire* *Mcmillan, 1989, p. 374 £ 45.00*

"The Changing Strategic Landscape" was produced first in 1989 and seems to have slightly modified early this year. There could not have been a more appropriate title for this equally thematic book. For seldom after the 1939-45 World War has the European landscape changed so phenomenally as in the 1990s. There is a United Germany; a whole lot of new democracies in Eastern Europe; the NATO-WARSAW Pacts have gradually metamorphised into symbolic military blocks whose military roles themselves are under scrutiny for reduction now particularly that the 19th November 34 Nations Treaty of Paris has terminated the Cold War - With capital letters 'C' and 'W' and placed it in an international archive.

While the whole book is an excellent anthology of strategic visionaries, the essays on Technological aspects ie 'Quest for Technological Superiority' and 'Strategic Impact of Technology' are far more educative.

— Brig CB Khanduri

Western Strategic Interests in Saudi Arabia. By Anthony H. Cordesman, *Beckenham, Kent, Croom Helm, 1987, p. 308.*

The purpose of the book, published in 1987, seems to be to make a case for the USA to meet the Saudi arms requests of 1985 and 1986. These requests were apparently refused because of objections from the pro-Israel lobby as also some other domestic difficulties. The author argues, convincingly, that fulfilling the

requests would be in the strategic interests of the western nations. Also, it would be in the interests of Israel to have the US rather than any other country provide the weapon systems, as the US could ensure that the items supplied would not have capabilities against Israel, and moreover the US would be in a position to deter Saudi Arabia from joining any Arab offensive action against Israel.

The book explains the importance of Saudi Arabia and the smaller Gulf states in providing the West with the prime source of energy - oil - on which their economies depend heavily. The internal and external threats to these countries is analysed. The military power of all the countries in the area are compared. It is argued that political constraints do not permit the Saudis permitting establishment of permanent US bases, and the best alternative is to provide the Saudi air force a definite edge over the neighbouring air force, so that it deters an aggressor, and in case of aggression it delays the aggressor till the US forces, present 'over the horizon' come to help. Saudi ports and air bases would be kept ready for the US forces to quickly move in and operate.

The book is well researched, with innumerable references. There is much interesting data on air and air defence weapons systems - their capabilities and limitations. This includes the AWACs given to the Saudis. It is amazing to see so much 'intelligence' obtained from unclassified publications - mostly in the US. Our intelligence agencies should take note !

A map of the Middle East indicating the countries and places mentioned in the book would have been most useful.

The Author had estimated that in the event of hostilities in the area, the USA would be able to build up its air power within 72 hours, and a three division army (light in armour) in about six weeks. Actually for the recent Gulf War, the US and allied build up was considerably slower, in spite of no interference from the Iraqis. It is tempting to speculate on the course of the war, if Iraq had made preemptive attacks on the air and naval bases in Saudi Arabia and Oman !

— Brig YS Desai, AVSM (Retd)

Resolving Disputes Between Nations : Coercion or Conciliation? By Martin Patchen
North Carolina, *Duke University Press*, 1988, p. 365 \$ 14.95.

The book under review is concerned about how can we avoid war while at the same time maintaining things we hold dear. It is essentially about conflict and conflict resolution. Patchen views that disputes between nations have not been analysed in a broad and systematic way from the perspective of general conflict process. Here a variety of topics like perception, decision making, use of threat, use of force, etc., are considered within an overall theoretical framework. An integrated summary of work is likely to contribute to an understanding of the interaction between disputing nations. For each topic, the ideas and findings both from general literature and evidence directly from studies on relations between nations are included.

The book attempts to lay down a framework which would enable nations to

analyse their disputes with other nations in a rational way. It is hoped that propositions mentioned will serve as hypotheses for future research and conclusions will provide perspective and guidelines for policy for mutation. Prof Martin Patchen has done a good job and deserves compliments for his endeavour.

— Dr PC Bansal

The Origin and Prevention of Major Wars. Edited by Robert I. Rotberg and Theodore K. Robb. *Cambridge University Press, 1989, p. 352, \$ 8.95.*

“War serves the interest of no one”.

In this volume, a distinguished group of political scientists and historians examine the origins of major wars, causes and discuss how to prevent a nuclear war.

Since the origin of modern state system, many wars have been fought. (30 years war, French Revolution etc) Though one learns about the potential causes from these wars, historians and political scientists tend to approach this task differently. Political Scientists, for instance, generalise and develop theories of causations of wars.

Gilpin, in his article on “Hegemonic wars”, explains the major wars as hegemonic and argues that this theory constitutes one of the central organising ideas for the study of international relations.

The essay on ‘Origins of War in Neo-realism theory’ by Kenneth-N. Waltz, not only refines earliest assumption of power, but also portrays ‘power’ as a means rather than a goal deeply rooted in human nature and explains the wars recurrence through the millennia.

The contribution of expected utility theory to the study of international conflict has been immense. The assumptions that states go to war when they expect to do better, by Bruce Bueno de Mesquita has proven to be flexible and reliable forecasting tool for diverse events. This theory, however, has been evaluated by Sagan in his article on ‘the origins of pacific war’.

The study by Jack S Levy, has taken the first step to examine some of the literature on domestic politics and war while Jernis and Quester’s article concentrates on misperception, crisis and politics. According to Quester, “War is a mutual disaster rather than an expeditious solution”.

The major section on “Lessons and analogies from early wars”, according to Guilmartin, and Myron, enhances the understanding of origins of war by the study of the past. But Meir is of the opinion that it is just a source of knowledge.

The application of these models to the possibility of a nuclear war is varied. Today, due to changes taking place, a nuclear war is unlikely to start. To conclude, this book is first comprehensive study on origins of war and prevention. This interdisciplinary work not only enhances the knowledge of policy makers, but also serves as a reference guide to research scholars, peace and war students.

— G Satyawathi
J.N.U.

International Ethics in the Nuclear Age. Edited by Robert J. Myers, Lanham, *University Press of America, 1987, p. 369.*

Robert J. Myers has edited lectures on Ethics and foreign policy originally presented at the University of Chicago, the University of California, Berkley and Hunter College of the City University of New York in a masterly collection of theoretical discussions, case studies and historical analyses of the proper role of Ethics in formation of Foreign Policy of America. However the application of the theme is essentially universal.

This Volume is the fourth in the series "Ethics and Foreign Policy" series the Carnegie Council on Ethics and International Affairs sponsored. Rarely has a book contained such lucid and detailed analysis of moral responsibility and dilemmas of governments, bureaucrats, military thinkers, teachers and scientists. It should be required reading for whoever gather to make decisions affecting national and international destinies faced with ideals like, 'Right or wrong, my country first or the Stalinist ethos; "How many divisions does the pope have"?

— Colonel Balwant Sandhu

Liddell Hart and the Weight of History. By John J Mearsheimer. *London: Brassey's, 1988, p. 234, \$ 15.95.*

Capt Sir Basil Liddell Hart holds an undisputed niche in contemporary literary history as a military historian, commentator, and innovative theoretician - the Captain who taught Generals. During the intervening decades of the Great wars, he was able to influence the shaping of the British army and its Grand Strategy for a continental role in the next War. Particularly after he became the personal adviser to Hore-Belisha, the Secretary of state for war in 1937. Fuller told him in 1925, "When I make a criticism, the Army Council is perturbed. When you make one, it is shaken to its roots. You have a much greater popular reputation".

The author has concerned himself with the inherent danger of mis-interpretting history and of misconstruing the written word in any process of justification and re-evaluation. In the process, John Mearsheimer, not only gives the reader a comprehensive review of Liddell Hart's writings/lectures, but also co-relates and links them up with the evolutionary process of his grand concepts. Some contradictions, som vagaries come into focus. Was history mis-interpreted or merely put in proper perspective by Hart?

— Maj Gen SK Talwar

Non-alignment in Age of Alignments. By A N Singham & Shirley Hune, *London Zed, 1986, p. 420, \$ 20.95.*

A coherent group, comprising of member countries with similarity in historical experience but divergent background and interests and, with a number of them confronting co-members including fighting wars continues to function as a crusader in the international affairs. The members with different political ideologies - from all geographic regions, religions, cultural backgrounds and races including blacks and whites - have started wielding influence in the world that has been identified

generally in having two super power blocs. They meet at various forums and had held nine summits till the publication of this Book. There are dissensions among them resulting in contradictory assertions. The members have their specific aspirations emerging from their environments and historical background. At the end of the meetings the finale is a declaration that barring a few reservations, is a piece of consensus. How is this possible among a membership comprising two thirds of humanity, how is this unity in diversity possible and what are their achievements? These are some of the questions that are answered by A N Singham and Shirley Hune in 'Non-Alignment in Age of Alignments'. This vast subject requires intimate knowledge of the political, economic social and cultural history of the members, their relationship with their past colonial masters and their orientation in the existing power blocs.

In its entirety this book on Non-Alignment is a very fine piece of research that should interest readers following the international affairs. It also should be useful to researchers studying the evolution of international organisations.

— Brig Satjit Singh, AVSM, VSM

The Decline of the World Communist Movement : Moscow Beijing and Communist Parties in the West. By Heinz Timmermann. *Colorado Westview, 1987, p. 275.*

Dr Timmermann, a German, has specialised in the study of world communism having been for many years on the staff of the Federal Institute for East European and International studies, Cologne. To quote from the forward to this book, Timmermann, "documents the evolution of world Communism from Lenin's original hopes, through Stalin's ruthless practices and Krushchev's illusions to the incoherent activities of Brezhnev and Gorbachev's critical search for a return to reality".

The reader will enrich his perception of the causes of the decline of the World Communist movement through a study of the rise and steep descent of the Communist parties of Italy, France, Spain, Finland, Portugal, Cyprus, Chile and Japan. To complete the picture a chapter or two on the vicissitudes of the Communist parties in East European countries would have been welcome.

— Maj Gen RL Chopra, PVSM (Retd)

Gorbachev's Reforms : US and Japanese Assessments. Edited by Peter Juviler and Hiroshi. *New York Aldine Gruyter, 1988, p. 178.*

Peter Juviler and Hiroshi Kimura, authors of this book work in centres of Soviet study across Japan and the United States. The authors have analysed the revised and updated versions of papers presented at the Third US- Japan Sapporo Summer Slavic Studies Seminar. The authors have attempted to convey both sides of Gorbachev's reforms, the extent of their dramatic changes and the sobering evidence of their limits and obstacles. The three main obstacles identified by the authors

are gap between material and technical needs of reform and available skills and resources, conflict of interests and spontaneity and control.

The book recognizes the fact that in life outcomes of a process are more complex than perceived. This is because final outcome is a function of innumerable imponderables. There are bound to be conflicting interests particularly of the bureaucracy and public. It has been rightly concluded that perestroika unlike glasnost will be a comparatively lengthy process with its own logic and stages, despite the favourable conditions like international detente. Perestroika is a vision of the most far reaching transformation, a revolution from the fountain head. It is intended to rapidly modernise the stagnating, antiquated and inefficient economy. Perestroika can be compared with such historical turning points as 1921, which ushered in the new economic policy with far reaching consequences.

-- Maj Rakesh Sharma

Inside Spetsnaz : Soviet Special Operations, A Critical Analysis. By Major William H Burgess III. *Presidio Press, 3 1990, Pamaron Way Novato CA 94949, 308, p. 139 \$ 24.95.*

Special Operations Forces (SOF) by their very nature are shrouded in secrecy and tend to remain shadowy - part rumour, part legend and part fact. In case of a closed society such as the USSR, this is further compounded by deception, disinformation and media speculation. Over the years the Soviet SOF or Spetsnaz have been credited with operations which probably owe more to myth than reality. After all, it does tend to stretch credibility when no less an "authoritative" source than Jane's Defence Weekly in its issue of 25 Jan 1986 states that - "the Soviet Union has maintained a secret detachment of female Spetsnaz in the area of Britian Greenham Common Airbase since the deployment of US Air Force land based Tomahawk Cruise Missiles in 1983 The women agents are trained to attack the missile sites under war or surprise conditions in a pre-emptive strike."

This book attempts to differentiate myth and reality. The authors, analysts from Intelligence, special operations and the academic community have traced through historical documents the spetsnaz from their humble origins in the early 1900s through their participation in World War II and more recently in Czechoslovakia and Afghanistan. Current activities, organisation structure and future trends have also been adequately covered. Of special interest to us, its treatment of Spetsnaz CI activities in Afghanistan. A must for all connected with the field of activity.

-- Major Deepak Sinha

The Fall of Afghanistan: An insider's account. By Abdul Samad Ghaus, Virginia, *Pergamon Brassey's, 1988, p. 219.*

The author's credentials are impeccable. A career diplomat, he has held the important posts of Director General of Political Affairs and Deputy Foreign Minister in Afghanistan. He had represented his country at the United Nations and he has been involved in all major aspects of Afghanistan's foreign policy till the Soviet intervention forced him to seek shelter elsewhere. He now has the distinction of being the most senior survivor of Mohammed Daoud's foreign policy team.

Three chapters in the book are devoted to a broad historical perspective covering the period of the two world wars and the years between them. Though Afghanistan remained neutral in both wars, these years were not trouble free for the Afghan regime. One can discuss the continuous see-saw struggle between Britain and Russia for supremacy in Afghanistan. The author analyses the imperatives which governed the actions of Britain and Russia and also gives an account of the German efforts to establish an influence in Afghanistan. This is indicative of the strategic importance of the region.

The author then moves ahead to the post-war era and then the advent of the Republic. The emergence of USA as a world power, the withdrawal of the British from the sub-continent, and the creation of independent states of India and Pakistan gave rise to new pressures and influence in the region. The author dwells in some detail on the Afghan Pakistan Problems relating to the Baluch and NWFP issues. This makes interesting reading.

This period also saw improvement in Afghan-USSR relations. At the same time, a dialogue with USA was also taking place. We again see a struggle for supremacy in the region - this time between the 'new' world powers viz USA and USSR. The Afghan regime was now paying attention to normalising relations with Iran. Chinese assistance towards Afghanistan's developmental efforts also commenced during this time.

The military coup took place in the pre-dawn hours of 17 July 1973. The author discusses the events leading to the coup and also expresses his view that this coup was definitely not a Russian initiative.

The author describes the events leading to the fall of the Republic in 1943 in an historical perspective. Despite the withdrawal of the Soviet troops from Afghanistan the author feels their influence would continue.

This book is well-written and provides an intimate knowledge of the happenings in Afghanistan. Military professionals and students of international relations will find the book useful.

-- Col AV Sathe

The History of the Vietnam War. By Charles T. Kamps. *London Temple Press, 1988, p. 240, \$ 15.00*

The History of the Vietnam War is well documented with over 700 Colour and black and white photographs and illustrations of the US involvement in South East Asia for over 11 years from 1964 to 1975. It was a war, unlike any other in the US history. Unpopular at home and abroad, facing an elusive and a dedicated enemy, the US Forces, could not win a decisive victory. The US Forces, fought a difficult war, thousands of miles away from home and eventually had to leave under pressure from Vietcong and the North Vietnam Army when the last chopper took off from the Top of the American Embassy in SAIGON.

Not much credit has been given to the people's War and the fantastic re-

sillience of the Vietnam People to finally liberate the whole of the country and giving the US a bloody nose. All the same, it is a very commendable effort although the price tag is a bit high.

— Maj Gen KS Pannu, MVC (Retd)

The War in South Vietnam : The Years of the Offensive 1965-1968. By John Schlight. *Washington DC, United States Air Forces, 1988, p. 410. Air Force History Series.*

The Indo-China Tangle: China's Vietnam Policy 1975-1979. By Robert S. Ross. *New York, Columbia University Press, 1988, p. 361, \$ 46.00*

Both books, although published a bare two years ago, cast fresh light on events in the geographically sensitive region of South East Asia which took place in the earlier two decades. Of course, with the rapidly changing global strategic scenario, what with the dramatic disintegration of iron curtain and the Berlin Wall, as well as collapse of communism in East Europe and of the Soviet economy, many assumptions and conclusions contained in these two works compiled after diligent research, have become outdated. Nevertheless, they remain of value as record of historical fact and the analysis arising therefrom, especially to discern if there is a link with current events, for example, what still is a tangle in Kampuchea (Cambodia).

Till this day, the Kampuchean imbroglio has defied solution. Of late, there are positive signals of a peaceful settlement, especially as the USA has announced withdrawal of support to the Khmer Rouge, the dominant partner in the 'resistance group', the so called coalition government of democratic Kampuchea, who are pitted against the DVN backed regime of H Sen in Phnom Penh.

Both the works focus timely attention on a portion of the globe, which though not in the lime light, yet remains a sensitive one.

— Brig Ramesh Chandra (Retd)

Westward Watch : The United States and the Changing Western Pacific. By Norman D. Palmer. *Virginia Pergamon Brassey's, 1987, p. 176, \$ 14.95.*

The growing importance of the Western Pacific as a major World region and of the countries of the region as international actors is widely recognised.

For the United States the Western Pacific is probably the second most important region in the world. It is perhaps the most highly militarized part of the world. Threat perception vary greatly among countries of the region. The western Pacific is the homeland of some of the world's oldest and most complex civilizations, and of more than one third of the human race. The allied occupation of Japan ended, and a peace treaty was signed with Japan to which the Soviet Union and India did not adhere. Japan re-emerged as a sovereign nation and the US-Japan security treaty was signed in 1951 and affected in 1952.

The book highlights the growing interest of the United States in the Western Pacific region.

-- Maj Gen BD Kale

Containment -Volume I Concept and Policy: Based on a Symposium Co-Sponsored by the National Defence University and the Foreign Service Institute. Edited by Terry L. Deibel & John Lewis Caddis. *Washington, DC National Defence University Press, 1989, p. 286*

Most of us are familiar with the concept of containment as a part of US policy in relation to the Soviet Union, but not many are fully conversant with the origin and development of the concept in the US over last four decades. Even George F Kennan who originated the idea in 1947 and coined the term in relation to US policy towards the USSR could not have imagined the far reaching applications and effects of his concept.

In this volume, views of various eminent participants of a symposium organised by the US National Defence University have been collected. The first article on origins of containment is by George F Kennan himself. In part two of the volume the effects of the policy of containment on National Security of the US and its impact on the security environment at global level have been analysed in detail. The concept and its application has many lessons for our policy makers, scholars and analysts.

This book should be read by Senior Serving Officers of the Armed Forces as the principal ideas reflected here have relevance to our National Security in the regional context.

-- Maj Gen Afsir Karim, AVSM (Retd)

The Defence Industrial Base and the West. Edited by David G. Haglund. *London, Routledge, 1989, p. 288, \$ 30.00.*

This book will be of special interest to our planners of production of the LCA and others interested in military production. The high costs of development - TORNADO, the LAVI and the European fighters is brought out.

Israel who took up the production of its Lavi aircraft (Lion) half of which was to be produced in US and most of its funding was from America had to give up its project for manufacture after 6 years. It was a very hard decision taken after the prototype had flown, millions of dollars had been spent and 3000 to 4000 workers, (a large proportion in a small state) - had to be thrown out of their jobs.

The European aircraft programme taken up since 1987 by a consortium of 4 nations, Britain 33%, Germany 33%, Italy 21% and Spain 13% is also facing the high cost of the Euro-fighter, dollars 50 million each on the basis of 800 units. The US not wanting to have its aerospace industry being left out has offered to pay 10% of development cost in return for guaranteed access to US sub-contractors, who expect dollars 1.5 billion worth of engine and avionics contracts. Euro-space expect to export 400 units by which they expect the cost of their plane to

come down by 13% . The Americans are fighting hard offering Agile Falcon at dollar 17 million and Hornet 2000 at dollars 26-28 million each.

Description of the German technological based corporations on whom we are dependant for technology transfer and of Swedish arms industries is also of general interest.

— Maj Gen Pratap Narain (Retd)

Japan's High Technology Industries : Lessons and Limitations of Industrial Policy.
Edited by Hugh Patrick. *Washington, University of Washington Press, 1986, p. 227, \$ 40.00.*

This book is the result of a study sponsored by the Committee on Japanese Economic Studies, based on assistance and grant from the Japan Foundation. It consists of seven chapters each written by one or more well known scholars, and covers almost all aspects of Japanese industrial policy and the lessons that American planners and industry could derive therefrom. In order to discourage American planners, and rightly so, from blindly trying to copy Japan's example, Hugh Patrick in his Introduction points out that :

The first lesson from Japanese experience in high technology industrial policy is that there is no simple or single solution that has been or can be applied in Japan, much less in the United States.

Later while discussing Japan's industrial policy he observes that 'Macro industrial policies have long characterised Japanese economic policy in practice, though seldom described as such.

Macro industrial policy is the term used to describe policies, especially incentives to save, to invest and to engage in R&D, that increase the productive capacity of the economy in the longer run, while leaving it to the market place to allocate resources among specific industries.

IISITC (IIS International Trade Commission) has a down to earth approach towards the development of US industry and of industrial 'targeting' i.e. defining the objectives and goals of industrial policy which put bluntly is 'coordinated government actions that direct productive resources to give domestic producers in select industries a competitive advantage'.

(India would do well to be guided by this principle)

Regarding Japanese technology and industry, the evaluation of the authors is -

"Japanese high technology - industrial policy will become narrower in one dimension and broader in another. That is, as markets work increasingly well, the government will focus its sector specific policies and resources increasingly on organising and coordinating large scale, long term, high risk joint generic research projects with large firms". "The slogan of a knowledge-intensive society may even evolve into a society of basic and applied science for the world in another decade or so".

Present trends certainly confirm the observations of the authors.

The book merits careful study.

— Col R Rama Rao, AVSM (Retd)

Soviet Helicopters : Design, Development and Tactics, By John Everett-Heath, *London : Jane's, 1983, p. 179.*

This book traces the historical development of Soviet rotary-wing aircraft including autogiros. It also describes their characteristics and employment.

The Russians have not only built the four largest helicopter types in the world but also have in service the two most heavy battlefield helicopters.

According to the Military Balance 1982/83, the United States has always led the USSR in the number of military aircraft. While the US has 8000 helicopters, the USSR Naval Force has only 4000. But with much superior production the Russians are now closing the gap.

The book covers in detail the characteristics of various helicopters which are with the USSR along with their photographs. A chapter each has been devoted to the design philosophy and the evolution of Soviet helicopter tactics. The last three chapters give in brief the biographies of Nikolai Zhukovsky, Boris Yuriev, Nikolai Kamov, Ivan Bratukhin, Alexander Yakovlev and Mikhail Mil, the pioneers in the helicopter design.

A good reference book which should find a place in all military libraries. Also useful for the designers of helicopters.

— Captain RP Khanna, AVSM
Indian Navy (Retd)

A Miscellany on the Raj. By LM Bhatia, New Delhi, Reliance Pub. House, 1989, p. 147, Rs. 120/-.

This is a collection of articles produced by the author from time to time. These have been arranged in such an order so as to give an idea as to how the British power got consolidated in India, right from the time of the East India Company to the hey days of the Empire circa 1911. The narrative concludes with grant of Independence.

The style of the writing is simple, penetrating and eminently suitable to a student of history or for one who undertakes to review the past history of British rule in India and the circumstances leading to grant of Independence and the continuity of the relationship with Britain after the partition of the country.

— Lt Col A K Sharma

Military Leadership in India -- Vedic Period to Indo-Pak Wars. By Maj. Gen. Rajendra Nath, *Lancers Books, P.O. Box No. 4236, New Delhi-110048, 1990 p. 586, Price Rs. 450.00.*

As a record of past events, history is often considered to be prejudiced by the one who does the recording. Indian Military history affords plenty of scope for interpretation and controversy depending on different points of view. Consequently, a number of authors, of books and biographies on the subject, have displayed a marked tendency to stylistically conceptualise and eulogise and, at times, produced distorted versions of facts interwoven with propaganda, popular image and literary licence. It is in this context that Maj. Gen. Rajendra Nath's well-researched and comprehensive treatise is refreshingly unique in that apart from being immensely readable, it presents an unbiased analysis of Indian Military Leadership through the ages commencing from the Vedic period to present times.

The book begins with a thought-provoking foreword by Lt Gen S.K. Sinha who clearly emphasises the ineluctable fact that we can ignore the lessons of our military history only to our own peril. The subject is then introduced and elegantly presented in chronological sequence interspersed with succinct comparative analyses, drawing meaningful parallels between ancient, medieval and present times.

The highlight of the book is the appraisal of Military Leadership styles and Principles of War prevalent in ancient India. The gradual transition from "Dharma Yuddha" (ethical or just warfare as propounded by Bhishma) to "Koota Yuddha" (all-out war based on Krishna's School of warfare) leading to the concepts, and evolution, of Kautilya's Arthashastra are critically discussed.

The developments during British rule, events of 1857, the two World Wars, and the emergence of the INA are recorded very briefly. One feels that the justice, by way of both narrative and comment, has not been accorded to this important period of Indian history; this being probably the only disappointment in the otherwise exhaustive and comprehensive book.

The post-independence scenario has been documented in a cohesive and dispassionate manner interspersed with critical assessments. However, while discussing the 1965 and 1971 Indo-Pak Wars, the author confines himself to Army operations and almost totally ignores the participation, contribution and achievements of the Navy and Air Force. The concluding chapter sounds a note of caution against the detrimental effects of the changing national trends on the efficacy of the Armed Forces.

Well-researched compilation, blended with a smooth and entertaining narrative style and succinct analyses, makes the reading of this book a pleasurable experience and enhances one's interest in the subject.

History of the 5th Gorkha Rifles (Frontier Force) Vol. III - 1858 to 1991.
 By R D Palsokar, *Shillong, Commandant 58th Gorkha Training Centre, 1991, p. 317,*
 Rs. 350/-.

A recently released history of the 5th Gorkha Rifles (FF) covers a period from 1858 to 1990. It has interesting accounts of classic battles of the Afghan War, the bloody battles at Gallipoli during World War I, the battles of the Burma Campaign of Second World War, and of the conflicts on the Indian Sub-continent since 1947.

The book covers the history in two parts, the first being the Pre-Independence period. The battle of Spingwal Pass, 1878, was one which was studied by the following generation of officers for about four decades after it was executed by the valiant Gorkhas. During this period the Regiment saw action in Kabul, 1879, Charasia, Afghanistan and Kandahar. The Great War 1914-18 took the Regiment to the Suez Canal, Turkey, and Mesopotamia (now Iraq) which is still a scene of bloody wars. It was during the Second World War 1939-45 when the battalions of the Regiment fought in the Italy and Burma theatres of the War. The Regiment's accounts are of valour, which were recognised by nine Victoria Crosses, the highest for gallantry and many more awards. One of its battalions had the unique honour of winning two Victoria Crosses within 24 hours. In the process of these actions the Regiment suffered heavy casualties, perhaps the largest was over 400 men in one battalion in a single action. The first part of the book also records the history of the 6th Gorkha Rifles, at present in the British Army because two of its battalions willingly transferred to the Indian Army in 1947.

The Second part of the book, which covers about two thirds of the total book, offers an interesting insight into the transformation of, not only the Regiment, but the Gorkhas as such from the British Indian Army to the Indian Army after Independence. It gives a detailed account of the Jammu and Kashmir theatre of war during the 1947-48 operations where one Mahavir Chakra and other awards were won by one of its battalions. The Battle Honours of Zojila and Kargil were given to the Regiment. One of the battalions, in fact the same one that was honoured to participate in the Victory Parade in Japan in 1946, was selected for operations under the United Nations in the Congo in 1962-63. The famous Sialkot Sector of the 1965 Indo-Pak war has been described, where the Regiment was given the Battle honour of Charwa. A vivid narration of the story of Liberation of Bangladesh has brought out actions of three of its battalions, one of them being the first ever to be helilanded in the heart of the enemy at Sylhet to force the surrender of that garrison. The latest operations of the Indian Peace Keeping Force in Sri Lanka, where two battalions participated, has also been covered in the book.

This is a lucid historical record of one of the two regiments of erstwhile Indian Army, which earned the title "Royal" after its magnificent performance during World War I and earlier.

— Maj Gen HB Kala, SC

The Last of the Bengal Lancers. By Brigadier Francis Ingall. *London, Leo Cooper, 1988, p. 157, £ 14.95.*

The author has written a personal account of his services in India during the hey-day of the Raj. He joined the 6 DCO Lancers in 1929 and has given a fascinating account of his service in the then North West Frontier Province and other cantonments in India. He has written about his first battle experience where he led a horse cavalry charge (sword in hand) against the tribals near the Khyber Pass in 'the cavalry spirit'; that is 'when in doubt - charge'. He completes his story by describing the spirit of improvisation which enabled 6 Lancers under his command to carry out a bold advance in the final stages of the Italian Campaign.

In the post Independence era, Brigadier Ingall founded the Pakistan Military Academy at Kakul. He has written an interesting account of the problems and his approach to finding solutions to the day to day impediments during the raising of the Academy and in the upbringing of the Pakistan officer corps.

The book is an account of the life and attitude of a typical British officer of the Indian Army during the pre-war, World War II and post Independence era. The account is interlaced with anecdotes. He starts off with an interesting account of his life at Sandhurst including the pranks of the Gentlemen Cadets and the behaviour of the drill sergeants and the staff. The account covers the day to day life of a British officer in the Thirties including the mess, camps, clubs and, of course, Polo.

A fascinating book.

— Maj Gen LS Lehl, PVSM (Retd)

Battle with Barnacles. By S S Ganti. *Delhi, Desidoc, 1987, p. 82.*

Battle and Barnacle is one of the popular science and technology series published by Defence Scientific Information and Documentation Centre to promote knowledge among the Defence personnel, students and the general public.

The book deals with two major problems being faced by the mariners all over the world which effect the operational efficiency of ships. These are Fouling and Corrosion.

Perhaps the author could have briefly touched on the marine growth on the merchant ships, which unlike warships spend much time at sea. It is well known that the marine growth is much more when a ship is stationery.

On the whole an informative book which would require updating with further research being carried out by the scientists all over the world.

— Captain R P Khanna, AVSM
Indian Navy (Retd)

Regiment of Artillery, Life Customs and Traditions. By Dilip Bob. *Regiment of Artillery Association. p. 164, Price Rs. 395/-.*

Inspite of the best intentions, regimental histories, tend to be a dull and a drab

affair. A normal reader does a hop and a skip reading bits and pieces. In comparison, "Customs and Traditions of the Regiment of Artillery" reads like a well written historical novel; difficult to put down once started.

The book traces the customs, and traditions of the Gunners from the raising of the 5 Bombay Battery with its 2.5 inch RML on 28 September 1827 till date, with its sophisticated fire direction and missile systems.

Under the British, Artillery became a controversial arm, as giving natives access to this formidable weapon was considered unthinkable. It was in 1935 that the first group of officers was granted commissions into the Indian Artillery. Among them were 2/Lts PS Gyani (later Lt Gen) and PP Kumaramangalam (later General) and the A Field Brigade was raised at Bangalore on 15 January 1935.

The book gives us an insight into the gunner psyche, what makes him tick. The non-chalant attitude in peace and the blood-thirsty killer instinct in battle - the traditions that have made it the most effective arm in war - not always given its due as at Khemkaran when Gunner Regiments remained ahead of the Division at Asal Uttar and held the Pakistani Armoured Division at Bay.

Statistics of the various wars have revealed that eighty per cent of all casualties in battle are attributable to artillery fire, which was also mainly responsible for destruction of Iraqi armour in the recent Gulf War. The book gives us a realistic look into the role of the artillery in future air-land battles.

It is well illustrated, with colour photographs, cartoons and drawings by a well known artist. With the help of its myriad illustrations it takes us on a conducted tour of its various institutes, training centres and the schools of Artillery, the incubator where the professional Gunner is born and matured during his years of service. The book is reasonably priced and will make an excellent addition, lending grace to any unit or formation library, besides being of education value for all those who read it.

- Brig YP Dev (Retd)

I was a Prisoner of War in China. By Lt Col KN Bakshi, VSM, *New Delhi, Lancer International, 1989, p. 79, Rs. 120.00.*

The book is a first hand account of the author's experience. In 1962 Major Bakshi was commanding a Field Engineer Company which was deployed South of Sela (possibly as part of 62 Infantry Brigade).

On 19 Dec 62, some wounded prisoners including the author were handed over to International Red Cross at Dirang Dzong.

A tale of woe and suffering offering nothing of military value.

- Maj Gen Surinder Nath

The Making of Modern Tibet. By A. Tom Grunfeld, *Bombay, Oxford, 1987, p. 277.*

The author, Mr. Grunfeld, has produced a well documented book on the mysterious and isolated land (so it was till the Chinese People's Liberation Army marched into it in 1950). He has critically but objectively stated views of both the Chinese and the Tibetans on the vexed question of the Chinese claim of suzerainty over Tibet and the latter's rejection of it. And that is why he, perhaps, calls his book, "disinterested and dispassionate history".

There are a large numbers of books on Tibet but this book is different in that the author has relied on facts rather than on heresy or uncorroborated stories. He needs to be congratulated. In Appendix B on page 223, the author has catalogued various views on Tibetan independence which are very interesting.

— Brigadier Rai Singh, MVC, VSM (Retd)

The Military More than just a Job. By Charles C. Moshos and Fran R. Wood. *Virginia, Pergamon Brassey's, 1988, p. 305.*

This book represents the contributions of an international team of 17 leading military sociologists - some civilians and others military officers, who are all exceptionally qualified scholars of armed forces and society. The genesis of the book is based on the international conference on Institutional and Occupational Trends in Military Organisation held at the US Air Force Academy where social scientists from eight Western countries were also in attendance. The purpose of the study was to appraise the utility of the Institution to Occupation (I/O) thesis for broader understanding of trends in military organisations.

Understandably this book is predominantly for American policy planners but all the same many of the concerns and trends are relevant in our context too. This book is equally useful for our policy planners, and those connected with organisational and personnel policies.

— Maj Gen Amarjit Singh (Retd)

The Geopolitics of Super Power. By Colin S. Gray. *Lexington, The University Press of Kentucky, 1988, p. 274, \$ 26.00.*

The author is the founder-president of the National Institute for Public Policy and has written several books on Strategic Studies and the Adversary Relationship between the United States and the Soviet Union. The present work deals with geopolitical aspects of the bipolar international system and highlights the impact of the Mackinder's and Spykman's concepts of 'Heartland' and 'Rimland,' and the containment policy of the United States.

The book provides a comprehensive study of super power strategy and its evolution during the last four decades. The recent events in the Soviet Union have forcefully proved the Rollback concept described by the author in the concluding chapters.

— NBS

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The students have undoubtedly profited by these courses, as evidenced by the success achieved by them in these Examinations. Popularity apart, the courses contribute substantially to the revenue of the USI.

USI Journal

Oldest Defence Journal in India, it contains proceedings of lectures and discussions, prize essays, original articles, book reviews, etc.

It is published quarterly in April, July, October and January each year (the first issue being Jan-Mar each year). The Journal is supplied free to members. It provides a forum for the most junior officer to express his opinions relating to his profession.

Gold Medal Essay Competitions

The gold medal essay competition is held every year. The subject for essay is announced during the month of March each year. On the occasion of the Centenary, an additional Gold Medal Essay Competition has been instituted for Junior Officers of not more than ten years' service.

Lectures and Discussions

A series of lectures by outstanding experts on service, international affairs and topics of general interest to the Services are organised for the benefit of Local Members in Delhi.

MacGregor Medal

This medal is awarded every year to officers for any valuable reconnaissance they may have undertaken.

Rules of Membership

1. All officers of the Defence Services and all Central Services Gazetted officers Class I (including Retired), Cadets from NDA, other Services' Academies and Midshipmen shall be entitled to become members on payment of the entrance fee and subscription.
2. Life Members of the Institution shall be admitted on payment of Rs. 550/- which sum includes entrance fee.
3. Ordinary Members of the Institution shall be admitted on payment of an entrance fee of Rs. 100/- on joining and an annual subscription of Rs. 50/- to be paid in advance.
4. The Ordinary Members who have paid subscription continuously for five years are eligible to convert their ordinary membership into Life Membership by paying Rs. 350/- only.
5. The period of subscription commences on 1 April each year and shall be operative till 31 March of the following year.

For further particulars, please write to Director, USI of India, Kashmir House, Rajaji Marg, New Delhi-110011.