U.S.I. JOURNAL

INDIA'S OLDEST JOURNAL ON DEFENCE AFFAIRS

(Established : 1870)

PRINCIPAL CONTENTS

India and the World Strategic Environment	- *Lt Gen Satish Nambiar PVSM, AVSM, VrC (Retd)*
Chinese Armed Forces	- *Col Narendar Singh*
Open Source, Virtual and Public Domain Intelligence	- *Maj Gen Yashwant Deva, AVSM (Retd)*
Information Superhighways and Repercussions on Command Style	- *Lt Col A Banerjee*
Role of the Armed Forces in a Democracy : A Review of Fifty Years of Politico-Military Decision-Making	- *Lt Gen E A Vas PVSM (Retd)*
Integrating the Armed Forces	- *Lt Gen V K Singh, PVSM (Retd)*

OCTOBER - DECEMBER 1998

ALL RIGHTS RESERVED © Rs. 45.00 PUBLISHED QUARTERLY

USI PUBLICATIONS

Number	USI NATIONAL SECURITY PAPERS	
P-4	Para Military Forces by Lt Gen ML Chibber, PVSM, AVSM (Retd)	Price: Rs. 25.00
P-5	Defence Budgeting in India by Shri DS Nakra, FADS (Retd)	Price: Rs. 25.00
P-6	Possible Counter Measures Against Satellite Reconnaissance by Air Marshal IW Sabhaney, AVSM (Retd)	Price: Rs. 25.00
P-7	Higher Defence Organisation by Lt Gen SK Sinha, PVSM (Retd)	Price: Rs. 25.00
P-8	Leadership in the Indian Army During Eighties and Nineties by Lt Gen ML Chibber, PVSM, AVSM (Retd)	Price: Rs. 25.00
P-9	China's Strategic Posture in the 1980's (Revised) by Lt Gen AM Vohra, PVSM (Retd)	Price: Rs. 35.00
P-10	Intra-Regional Interventions in South Asia by Prof KR Singh	Price: Rs. 50.00
P-11	A Profile of Terrorism by Maj Gen Afsir Karim, AVSM (Retd)	Price: Rs. 50.00
P-12	National Security : Integrated Approach to Policy Making by Lt Gen Hridaya Kaul, PVSM, AVSM (Retd)	Price: Rs. 50.00
P-13	India's Defence Forces : Building the Sinews of a Nation by General V N Sharma, PVSM, AVSM (Retd)	Price: Rs. 50.00
P-15	Future Conflict, Clash of Civilisations–Validity of Huntington's Thesis and the Security Challenges of this Paradigm to India by Shri J N Dixit, IFS (Retd)	Price: Rs. 50.00
	USI SEMINARS	
S-2	Report on Armoured Personnel Carriers Chairman Maj Gen D Som Dutt (Retd)	Price: Rs. 15.00
S-4	Report on the Imposition of a Manpower Ceiling on the Army Chairman Lt Gen ML Thapan, PVSM (Retd)	Price: Rs. 15.00
S-5	Report on Recruitment into the Officer Corps of the Armed Forces Chairman Maj Gen D Som Dutt (Retd)	Price: Rs. 15.00
S-6	Report on a Seminar on Cooperation in Defence Chairman Lt Gen ML Thapan, PVSM (Retd)	Price: Rs. 15.00
S-7	Report on a Seminar on Review of the Organisation Pattern of the Indian Army Chairman Lt Gen ML Thapan, PVSM (Retd)	Price: Rs. 25.00
S-8	Report on the Military Threat in the Nineteen Eighties Chairman Lt Gen AM Vohra, PVSM (Retd)	Price: Rs. 30.00
S-9	Report on Nuclear Shadow over the Sub-Continent Chairman Maj Gen DK Palit, VrC (Retd)	Price: Rs. 25.00
S-10	Relationship of Military Law and Discipline with the Judicial System of the Country Chairman Lt Gen ML Thapan, PVSM (Retd)	Price: Rs. 35.00
S-11	Naval Strategy in the Indian Ocean by Vice Admiral S Parkash, PVSM, MVC, AVSM (Retd)	Price: Rs. 30.00
S-12	Report on Military and Society Chairman Lt Gen AM Vohra, PVSM (Retd)	Price: Rs. 50.00
S-13	Report on Foreign and Defence Policies for India in the 1990s	Price: Rs. 50.00
S-14	The Impact of the Gulf Crisis and the New World Order on South Asia	Price: Rs. 75.00
S-15	Disintegration of the Soviet Union and its Impact Upon the International Political System with Special Reference to South Asian Security	Price: Rs. 75.00

ISSN 0041-77OX

The

Journal

of the

United Service Institution

of

India

Published by Authority of the Council

(Established : 1870)

Postal Address :
Rao Tula Ram Marg, (opposite Signals Enclave)
Post Bag No 8, Vasant Vihar PO, New Delhi-110057
Telephone No. 6146755, 6146490 Fax : 6149773
E-mail : dirusi@nde.vsnl.net.in

Vol CXXVIII **October-December 1998** **No. 534**

USI Journal is published Quarterly in April, July, October and January.
Subscription per annum : In India Rs. 180.00. Subscription should be sent to the Director. It is supplied free to the members of the Institution.
Articles, Correspondence and Books for Review should be sent to the Editor. Advertisement enquiries concerning space should be addressed to the Director.

For overseas subscriptions, trade enquiries and advertisements write to : Spantech & Lancer, Spantech House, Lagham Road, South Godstone, Surrey RH9 8HB, UK.
Overseas annual subscription (By Air Mail) - £ 30 or $ 60
Tel : +44 1342 893239 Fax : +44 1342 892584

UNITED SERVICE INSTITUTION OF INDIA

for

the furtherance of interest and knowledge in the art, science, and literature of National Security in general and of the Defence Services in particular

Patron

Shri K R Narayanan, Hon'ble President of India

Vice-Patron

General V P Malik, PVSM, AVSM, ADC, Chief of the Army Staff
Admiral Vishnu Bhagwat, PVSM, AVSM, ADC, Chief of the Naval Staff and Chairman Chiefs of Staff Committee
Air Chief Marshal A Y Tipnis, PVSM, AVSM, VM, ADC, Chief of the Air Staff

President - USI Council

Lt Gen Chandra Shekhar, PVSM, AVSM,
Vice Chief of the Army Staff

Vice President

Vice Admiral P J Jacob, AVSM, VSM, Vice Chief of the Naval Staff

Ex-Officio Members

Shri Ajit Kumar, Secretary, Ministry of Defence
Maj Gen Surendra Shah, VrC, VSM
Officiating Director General Military Training
Air Vice-Marshal A Vikram Pethia, VrC,
Assistant Chief of the Air Staff, Training, Air HQ
Commodore S Bhasin, Director Naval Training

Elected Members of the Council

Vice Adm Inderjit Bedi, PVSM, AVSM (Retd)
Maj Gen Ian Cardozo, AVSM, SM (Retd)
Air Mshl KC Cariappa, PVSM, VM (Retd)
Lt Gen R S Dayal, PVSM, MVC (Retd)
Shri J N Dixit, IFS (Retd)
Air Mshl CV Gole, PVSM, AVSM (Retd)
Lt Gen AS Kalkat, SYSM, PVSM, AVSM, VSM (Retd)
Maj Gen D K Palit, VrC (Retd)
Lt Gen VR Raghavan, PVSM, UVSM, AVSM (Retd)
Admiral L Ramdas, PVSM, AVSM, VrC, VSM (Retd)
Lt Gen R K Jasbir Singh, PVSM (Retd)
Maj Gen SC Sinha, PVSM (Retd)
Lt Gen M Thomas, PVSM, AVSM, VSM (Retd)
Shri N N Vohra, IAS (Retd)

Director
Lt Gen Satish Nambiar
PVSM, AVSM, VrC
(Retd)

Dy Director & Editor
Maj Gen Y K Gera (Retd)

Executive Committee

Maj Gen Surendra Shah, VrC, VSM
officiating Director General Military Training
Air Vice-Marshal A Vikram Pethia, VrC,
Assistant Chief of the Air Staff, Training, Air HQ
Commodore S Bhasin, Director Naval Training
(Nominations of elected members under finalisation)

CONTENTS

October - December 1998

Editorial 573

India and the World Strategic Environment
Lt Gen Satish Nambiar, PVSM, AVSM, VrC (Retd) 575

Chinese Armed Forces
Col Narendar Singh 587

Open Source, Virtual and Public Domain Intelligence
Maj Gen Yashwant Deva, AVSM (Retd) 609

Information Superhighways and Repercussions on Command Style
Lt Col A Banerjee 630

Role of the Armed Forces in a Democracy : A Review of Fifty Years of Politico-Military Decision-Making
Lt Gen E A Vas, PVSM (Retd) 644

Integrating the Armed Forces
Lt Gen V K Singh, PVSM (Retd) 654

The Soldier and the Environment
Maj Gen E D'Souza, PVSM (Retd) 660

LETTERS TO THE EDITOR 668

REVIEW ARTICLES

India Exercises Nuclear Option
Lt Gen A M Vohra, PVSM (Retd) 671

Asia-Pacific Security - The Evolving Power Structure and the China Factor
Brig Subhash Kapila (Retd) 675

The Intelligence War in the Far East : 1930-45
Lt Gen S L Menezes, PVSM, SC (Retd) 678

SHORT REVIEWS OF RECENT BOOKS 681

Additions to the USI Library 706

NOTE

The views expressed in the Journal are not official and the opinions of contributors and the Editor in their published articles are not necessarily those of the Council of the Institution.

USI RESEARCH PROJECTS

*	Field Marshal K M Cariappa Chair	"*Emerging Low Intensity Conflict Scenario in India*". **Lt Gen V K Nayar, PVSM, SM (Retd).**
*	Adm R D Katari Chair	"*Shape and Size of the Indian Navy in the Early 21st Century*". **Vice Adm R B Suri, PVSM, AVSM, VSM (Retd) (Completed).**
*	Air Mrshl Subroto Mukherjee Chair	"*Sustainable Defence : Harmonising Long and Short Term Goals*". **Air Mrshl Vir Narain, PVSM (Retd) (Completed).**
*	Prof D S Kothari DRDO Chair	"*Indigenisation Map 1995-2005*". **Dr G Balachandran.**
*	Field Marshal K M Cariappa Chair	"*How to Make a Career in the Armed Forces Attractive?*" **Lt Gen R N Mahajan, PVSM (Retd).**
*	Adm R D Katari Chair	"*Naval Confidence Building Measures-An Indian Approach*". **Cdr Vijay Sakhuja.**
*	Air Mrshl Subroto Mukherjee Chair	"*The Impact of Emerging Technologies on Air Power*". **Air Mrshl Bharat Kamar, PVSM, AVSM (Retd).**
*	Prof D S Kothari DRDO Chair	"*Traditional Nuclear Theology and the South Asian Scene*". **Rear Adm K R Menon (Retd).**
*	Field Marshal K M Cariappa Chair	"*Modernisation of the Chinese Armed Forces (PLA) and Its Impact on India's National Security*". **Lt Gen C K Kapur, PVSM, AVSM (Retd).**
*	Adm R D Katari Chair	"*Information Technology : The Future Warfare Weapon*". **Lt Cdr A Anand.**
*	Air Mrshl Subroto Mukherjee Chair	"*India's Aerospace Industry in the Next Millennium*". **Air Mrshl S R Deshpande, PVSM, AVSM, VM (Retd).**
*	Prof D S Kothari DRDO Chair	"*Emerging Global and National Information Infrastructures and Their Security Implication : An Analysis*". **Maj Gen Yashwant Deva, AVSM (Retd).**
*	MEA Chair	"*India and the Regional Security Environment After Shakti 1998*". **Prof Satish Kumar.**
*	Research Study	"*Recent Developments in Afghanistan with Specific Reference to Their Impact on India*". **Mr Surya Gangadharan.**

EDITORIAL

As the year comes to an end, Indians have every reason to take pride in what the country has achieved during the year in the nuclear field and its contribution towards enhancement of national security. An important requirement for effective policy making is the need to have proper institutional arrangements and mechanisms for continuous and speedy evaluation of issues and for arriving at timely decisions. Mechanisms must also exist for interministerial co-ordination and for ensuring that national security requirements are kept in view while arriving at decisions. As a step in this direction the Government of India has announced the formation of the National Security Council (NSC). To complement the three-tier NSC, a 22 member National Security Advisory Board has been constituted with effect from 28 November 1998. The Board consists of eminent persons from outside the government, who specialise in fields such as foreign affairs, external and internal security, defence, economics and science and technology. It is indeed a matter of great pride that 13 out of 22 on the NSC Advisory Board are members of the United Service Institution of India, viz, Shri K Subrahmanyam (Convener), Shri M K Rasgotra, Shri J N Dixit, Shri N N Vohra, Maj Gen Afsir Karim, AVSM (Retd), Shri Bharat Karnad, Professor Matin Zuberi, Air Cmde Jasjit Singh, AVSM, VrC, VM (Retd), Dr Raja Ramanna, Shri K P S Gill, Shri Ved Marwah, General S F Rodrigues, PVSM, VSM (Retd), Admiral V S Shekhawat, PVSM, AVSM, VrC (Retd).

The lead article in this issue on "India and the World Strategic Environment" by Lt Gen Satish Nambiar, PVSM, AVSM, VrC is a perceptive analysis in a holistic framework of the international arena. The author has identified the issues that could spark conflict and has suggested the Indian response. The salient features are contained in succeeding paragraphs.

Demographic Movements. India is host to millions of refugees. The population explosion within India is likely to make it the world's most populated country in 50 years or so. Addition to these numbers by migrations from adjoining countries will cause serious social tensions, economic upheavals and environmental

disasters. Perhaps the institution of a South Asian Union on the lines of the European Union, with open borders and free market trade, economic cohesion including a common currency and a cooperative political arrangement may provide the answer.

Oil. India's dependence on oil imports to meet its energy needs, and the fact that two oil rich areas, namely West Asia and Central Asia, are in its proximity, has serious strategic implications for the country. Any conflict situation in either or both areas may result in curtailment in the flow of oil. India could even get drawn into the conflict should it get enlarged. India should work towards self sufficiency in sources of energy by exploiting own oil resources, make extensive use of solar energy, apply biotechnology to generate energy, harness more water resources for hydro-electric power and generate more nuclear power.

Strategic Alignments. India has democratic traditions, respect for basic human values and a free market economy. Mutually satisfying alignments with the USA and the Western European countries like France and Germany can perhaps work out with India as an equal partner, in the interest of international peace and security. India's time tested links with Russia need to be nurtured to ensure a polycentric world order.

We wish all our readers, a happy and prosperous New Year.

India and the World Strategic Environment

LT GEN SATISH NAMBIAR PVSM, AVSM, VrC (RETD)

Introduction

In another few months, the world will see not just the end of a century, but the end of a millennium. The Twentieth Century has probably been the most violent and destructive period that humankind has experienced. Within one generation, we were subjected to two World Wars and a 'Cold War'; the latter was characterised by what has now come to be called 'low intensity conflict', which continues to this day, without any substantive reduction either in content or spread. A tentative calculation of the toll of human life that these conflicts in the Twentieth Century have taken is stark and depressing. A total of eight and a half million combatants were probably killed in World War One (no details are apparently available of the civilian casualties); about twenty million combatants and twenty seven and a half million civilians were killed in World War Two; and about eight million combatants and thirty million civilians killed in the Cold War and the post-Cold War periods. That is, nearly a hundred million killed and, one may imagine, at least about three times that number wounded.

Determining the scope of an analysis of the international security environment in the aftermath of the end of the 'Cold War' is not easy; primarily because, though still largely concerned with the security of nation-states, such analysis needs to take into account the demolition of totalitarian structures and hence greater democratisation, and a broadening of the canvas that constitutes security. Besides the purely military aspect of territorial integrity,

Courtesy : *SP's Military Yearbook* 1998-99 (Guide Publications).

Lt Gen Satish Nambiar, former Deputy Chief of the Army Staff, was the First Force Commander and Head of Mission of the United Nations Forces in the former Yugoslavia. He is currently the Director of the USI.

Journal of the United Service Institution of India, Vol CXXVIII, No. 534, October-December, 1998.

the concept now encompasses preservation of political systems, economic and social well-being of the people, preservation of essential energy resources, protection of the environment and so on. Military theories are being revisited and possibly modified. On the one hand, there is a view that military conflicts between the most advanced and major powers are unlikely because available military technology has made warfare in the classic sense too costly, and in fact, unwinnable, except where the asymmetry is too large; even in the developing world, conventional war does not appear to be the preferred option. On the other hand, there are some social scientists and futurologists who are of the opinion that in the next century we are likely to experience war, violence, upheaval and change on an unprecedented scale. Notwithstanding the probability or otherwise of either view, there cannot be much argument that the current levels of ethnic, religious, theological, and other forms of 'low intensity conflict', are not likely to see any reduction of scale in the foreseeable future.

FACTORS THAT COULD SPARK CONFLICT IN THE TWENTY FIRST CENTURY

It is suggested that the root cause of the phenomenal levels of violence in the Twentieth Century is the flawed nature of the industrial civilisation that emerged; the large scale movement of human populations from the open countrysides to the industries located in the urban areas, and consequent concentration in restricted spaces; and extensive and irreparable damage to the ecology of the planet. Equally, the demand for the world's steadily reducing energy resources are a major factor in the conflict syndrome.

Unfortunately, the demographic patterns that are projected for the next century do not provide any scope for relief. A recent report brought out by the Worldwatch Institute, titled 'Beyond Malthus' has some startling statistics. The population of India is apparently set to increase to 1,535 million by 2050, making it the most populated nation on earth; at that time, China's population is expected to be 1,517 million, and Pakistan would be the third most populous nation in the world at 357 million. The pressures on

available resources of food, water and so on are easily deduced. The report states that :

"As demographic fatigue sets in and the inability of governments to deal effectively with the consequences of rapid population growth becomes more evident, the resulting social stresses are likely to exacerbate conflicts among differing religious, ethnic, tribal or geographic groups within societies... Aside from the enormous social costs, these spreading conflicts could drive countless millions across national borders as they seek safety...".

This latter aspect has some significance for India, in that, notwithstanding the severe strain on its resources to meet the demands of its own population, according to figures available with the UNHCR office in New Delhi, in the mid-nineties, India was host to about ten million refugees from neighbouring countries, namely, Afghanistan, Bangladesh, Bhutan, Myanmar, Sri Lanka, West Asia (Palestinians) and Tibet.

When the pressures generated by population explosions and possible demographic movements are coupled with the increase in competition for scarce resources, the risks of conflict greatly increase. One of the features of the century of industrial civilisation has been the almost total dependence on non-renewable sources of energy, namely fossil fuels, mainly oil. These are getting steadily depleted. There is, therefore, a near inevitability of the possibility of international crisis and conflict based on a fierce competition for the fast-depleting oil resources on the planet. The agenda for conflict in the Twenty First Century could well be set by the politics of petrol; this can be deduced from an analysis of major conflicts since the end of World War Two. Besides the conflicts generated by ideology, as in Korea and Vietnam, and the localised conflicts sparked by unresolved border disputes as between India and Pakistan, most of the inter-state conflicts have centred around West Asia and its vast hydrocarbon reserves. This oil rich area is vital to the economic and security concerns of the USA, Europe and Japan. During the Cold War era, this aspect did not assume such vital significance because the former Soviet Union was self sufficient in oil. It has since disintegrated, and Russia is struggling

to keep its economy afloat. A major power centre emerging as a rival to the West is the People's Republic of China, now a net importer of oil, which it desperately needs to sustain its economic and military modernisation. Japan is an economic superpower, which is already totally dependent on oil imports. India, which has the potential to become an economic and military power of some significance, is also heavily dependent on external sources of oil to meet its energy needs. The scope for conflict to safeguard access to oil resources therefore exists. In addition to the existing oil rich locations in West Asia, the yet untapped reserves of hydrocarbon potential in Central Asia and the South China Sea will become the focus of attention.

THE INTERNATIONAL STRATEGIC ENVIRONMENT

The sudden collapse of the erstwhile Soviet Union in the early 1990s, triumphantly proclaimed as a victory of Western capitalism, has in reality shattered a political equilibrium that sustained the international community in the aftermath of the Second World War. Conflict in the Cold War period was centred on posturing in various fields - economic, scientific, technological, and nuclear; there never was any real reason for the two blocs to go to war. Hence, the euphoria that followed the end of the Cold War was misplaced; as a result of which, many of the conclusions that the Western World arrived at in terms of establishment of a new world order were smashed to smithereens by the violent conflicts that raged in parts of the former Soviet Union, the Balkans and in Africa. What needs to be understood and appropriate lessons drawn is that the end of the Cold War is not the end of history; it was the termination of an equilibrium which has in some ways upset a balanced co-relation of historical forces.

The familiar bipolar equation having gone, and replaced by an almost oppressive unipolar one with the sole superpower setting its own agenda, the international community is looking for some other form of balance. In this context, it is essential to analyse certain trends and developments that will shape the course of events in the next century.

At the end of the Second World War, the Soviet Union was

thoroughly exhausted; it had suffered an unbelievable twenty five million casualties; its industries and infrastructure were ravaged and bombed out; it, therefore, of all the nations in the world, had the least interest to go to war again soon. However, its attempts to match the militarisation of the Western alliance became a ruinous exercise. The real surprise therefore is that the economic and internal collapse of the Soviet militarised state should have taken four decades. Under that shadow, Russia appears to be increasingly taking on the contours of a Germany that surfaced from the Versailles Treaty following the First World War. There is seething anger and economic discontent; there is a feeling of deprivation, of loss of prestige and injured ethnic pride. Added to all that is the obsession that the political and military establishment in Russia has about the Eastward expansion of NATO. Given Russia's tremendous material resources, its inherent scientific and technological infrastructure, and the pride and resilience of its people, it is inevitable that the nation will emerge strong and powerful once again. The speculation can only be how long this will take, and whether this process will generate sparks that may ignite conflict on a large scale.

Concurrently with this resurgence of the Russian state, will be the thrust towards a polycentric world order comprising large and medium powers. It is a historical arrangement. The difference will be that whereas in the last few centuries, such an arrangement encompassed the European powers, with only Japan from the East, the next century will see a significant shift away from Europe towards the East. The Asian continent will take its place in the international arena with China, Russia, Japan, and possibly India, joining the USA and Europe. In this configuration, the USA will continue to be a dominant economic and military force for much of the Twenty First Century, unless it degenerates under the contradictions of over-reaching itself in trying to run the world. Unified Europe will also continue to be a significant player both economically and militarily; in the latter, as the main component of NATO or another similar structure. The Russian role will largely depend on the speed with which it is able to resurrect itself. Japan's economic role will continue to be significant; whether it will militarise has to remain a speculative issue, very much dependent on what

the Chinese do in the East Asian region including the South China Sea. China's role will be significant; she is already a power of some stature; developing at a fast pace economically and modernising her military. Given her requirement of oil for economic growth, it is not inconceivable that she will spare no effort to secure for herself the oil-rich basin of the South China Sea; equally, her Western flank borders on the other known oil reserves of Central Asia, which she will strive to exploit to her advantage (it will be recalled that both these areas are possible conflict zones).

DIMENSIONS OF CONFLICT

The end of the Cold War signalled the demise of ideology as the prime source of conflict; by proxy or otherwise. Capitalism triumphed over socialism, though both were different manifestations of the industrial era, primarily because the former identifies itself with the self-centred motivations of the human race. Since then, the focus in the West particularly, has shifted to identifying a "clash of civilisations" as the source of conflict in the future.

Obviously there is much merit in such a prognosis given the parameters on which the thesis is based. It may therefore be useful to dwell on the main parameter that the "fault lines" between civilisations will be the battle lines of the future. There is no doubt that the strains of the different civilisations, namely the Western (Christian), Islamic (which runs from Turkey or maybe now Bosnia-Herzegovina through West Asia and North Africa, Central and South Asia to South East Asia taking in Malaysia, the Philippines and Indonesia), Sinic and Indic carry within them the seeds of confrontation. However, except for the Sinic, and maybe to some extent, the Indic civilisations, the other two, which are the more prone to conflict, are not monolithic enough to sustain the theory of conflict on a civilisational basis.

The inescapable truth of an impending clash between "the Western World and the Rest", as Samuel Huntington puts it, lies both in the past and the present. The "West", as the "Rest" sees them, have attained a degree of affluence and high standards of living for their peoples, by the exploitation of the mineral and human

resources of colonies over the last few centuries, by the material wealth generated by the industrial era, by the unfettered exploitation of the natural resources of the planet. And having reached these exalted levels, they (the West), led by the USA, seek to impose on 'the Rest', their perceptions of moral values including human rights, environmental restrictions, technology denial regimes and so on. The scenario for conflict therefore needs no civilisational connotation; it is generated by the revolt of the oppressed.

Notwithstanding this grim outlook, it may be suggested that this scenario is not by itself likely to spark conflict in the next century; the real sparks will be generated by some of the 'fallouts' as it were, of the "West' versus the "Rest" syndrome. The demographic movements to the affluent West, propelled by ethnic, tribal and religious strife initiated by the explosion in populations in the developing countries will be difficult to control, given the international covenant of not turning away suffering refugees. This will severely strain the already slender veneer of tolerance and assimilation in Western societies. Efforts will therefore be concentrated on introducing international intervention in local conflicts, which may either extend the conflict, or give further impetus to fissiparous movements. Africa and parts of Asia, including South Asia, would appear to be the fertile arena for this type of situation.

In other parts of the developing world, terrorism coupled with drug trafficking will be a major concern. Whether state-sponsored to correct perceived imbalances, or to respond to perceived impositions, or undertaken by fanatical groups or paid mercenaries, terrorism will continue to be a major factor in international security calculations. Any part of the world could be affected by this menace, and the international community will strive to institute appropriate mechanisms to deal with it effectively. The drug trafficking menace will need to be particularly addressed in South America, Afghanistan, Pakistan and parts of South East Asia like Thailand.

The tussle for control, exploitation and protection of the existing resources of oil and the known oil reserves will be a major factor in spawning tensions that would have the potential for conflict. The West Asian region has already demonstrated its vital importance

to the international community to the extent of drawing in sizable military forces, particularly of the USA and other Western powers, to wage war on a massive scale for the security of its oil resources. The Central Asian region has also demonstrated its equally vital importance to the major players at the global and regional levels; the USA, Russia, China, Turkey and Iran are all exerting their utmost to have a dominant role in the exploitation and control of the large oil reserves of the region. Ironically, both these major oil regions, the traditional West Asian oil belt and the emerging Central Asian oilfields, are home to significant Muslim populations. Tensions and conflict on a small or large scale could therefore take on the dimensions of Islam versus the Christian West. In the other major area that has large oil reserves, the South China Sea, attempts by China to assert control and exploit the oil resources would no doubt induce tensions and the scope for conflict with her East Asian neighbours, Japan, South Korea, Taiwan, the Philippines and Vietnam. Since these countries have close political and security links and affiliations with the Western world, it is not inconceivable that the USA, and at least some of its Western allies, and countries like Australia, would try to limit the extent to which China dominates the region. Such a move could well develop into a Sinic versus Christian world civilisational conflict dimension.

Together with the above scenarios, localised tensions and low level conflict may be expected to continue in various parts of the world; in the Balkans, parts of the former Soviet Union, West Asia, Central Asia, Afghanistan, South and South East Asia, North Africa and sub-Saharan Africa and parts of South America. However, it may be reasonable to suggest that, in most cases, the compelling need for the economic and social well-being of peoples and nation states will force the political leadership of the countries concerned to look for compromise and adjustments.

INDIA'S GLOBAL STRATEGIC OPTIONS

The factors that could spark conflict in the Twenty First Century, the global strategic environment and the dimensions of possible conflict are aspects that are no doubt receiving attention within the establishment and the strategic community in India, to

assess their impact on the nation's security, economy and the social structure.

The connotations of demographic movements occasioned by the pressures of population explosion in the neighbouring countries are already an element that India has had to deal with in the last few decades, in context of the fact that we are hosts to millions of refugees. However, considering that the population explosion within India itself in the next fifty years is likely to make it the world's most populated country, it would be stating the obvious in suggesting that any additions to these numbers by migrations from adjoining countries will cause serious social tensions, economic upheaval and environmental disaster. The challenge will therefore be to put in place appropriate structures to ensure that any migratory movements that may take place are part of mechanisms that are designed to absorb any adverse impact. The only framework that would appear to lend itself to successful management of this challenge is the institution of a South Asian Union on the lines of the European Union, with open borders and free market trade, economic cohesion including a common currency and a cooperative political arrangement that is also answerable to the people of the region as a whole. The feasibility of such an option lies in the common strains of ethnicity, culture, tradition and aspirations of the peoples of the region. Needless to say, for such an arrangement to come into being, a very high order of statesmanship, determination, sagacity and compromise are required. India, with its size, geographic location, manpower and material resources, large industrial base, technical expertise and well established democratic traditions will need to be the driving force. The developed world, particularly the USA and West European countries like France and Germany, and possibly Japan, could act as a catalyst in this remarkable venture to make it happen. The assistance required is not in the form of doles (with the inevitable strings attached), but an infusion of investment particularly in the infra-structure sector of the South Asian countries, ready access to advanced technology in industry and agriculture and more particularly in the exploitation of renewable energy resources like solar energy, biotechnology and the ocean bed. A tall order on all counts, but not impossible. Should such an arrangement come

about, it would also provide a credible and effective apparatus for the security of the region from external conflict influences, with considerably reduced demands on the countries of the region for allocations for individual defence needs.

India's dependence on oil imports to meet its energy needs, and the fact that two oil rich areas, namely West Asia and Central Asia, are in its proximity has serious strategic implications for the country. Any conflict situation in either or both these areas would almost inevitably have a fallout that will affect India. Firstly, the flow of oil could be stopped or curtailed, thus severely affecting every sphere of activity in the country. Secondly, the country could get drawn into the conflict, should it get enlarged; India has some very close traditional and cultural links with many of the countries of both regions. The primary requirement in this context, therefore, is for India to exploit its own oil resources to the extent feasible, but more importantly, to reduce its dependence on fossil fuels, and exploit other abundant renewable sources of energy. In a country like India, the scope for extensive use of solar energy is limited only by the degree of determination to harness it. Similarly, the application of biotechnology to generate energy has equally extensive scope; the fact that large sections of India's rural population are still in the "bullock cart" age, may not be a bad thing after all. Harnessing the waters of the many great rivers that traverse the sub-continent for the generation of hydro-electric power is another area that will need more attention. India's capacity to generate nuclear power is established; it is only restricted by the technology-control regimes imposed on it by the Western world. Once the dependence on oil as the primary energy source is removed, the scope for the sub-continent to get drawn into any conflict scenario in West Asia or Central Asia is substantially reduced. Even so, it would be strategically prudent to institute arrangements diplomatically and commercially with countries like Iran and Iraq, with whom India has traditionally had excellent relations, to deal with crisis situations that may arise; similarly, traditional links with countries of Central Asia like Kazakhistan and Turkmenistan should be exploited.

While striving to take its rightful place in the international

community by giving the right thrust and direction to its internal and external economic and commercial policies, and concurrently ensuring that its defence preparedness meets its national security concerns, India needs to set its diplomatic sights on affiliations and alignments that will deal with the international strategic environment. All the right reasons exist for durable and mutually satisfying alignments with the USA and West European countries like France and Germany; democratic traditions, respect for basic human values, free market economies and so on. Provided there is an understanding that India is to be an equal partner, there is no reason why security arrangements cannot be entered into whereby regional or international threats to peace and security are met jointly. India's traditional and time-tested links with Russia must be nurtured, and in fact strengthened; both countries need to be equal partners (together with others if necessary) in the diplomatic battles towards ensuring a polycentric world order. It is a matter of some regret that when Russia was struggling to come to terms with the new dispensation, India was not at the forefront of efforts to give her the support she needed; it is another matter altogether that Russia looked towards the West to bail her out.

In looking for other global and regional affiliations and alignments, it is essential that India shed its tendencies to look for a moral stand. Japan, Vietnam and countries like Thailand, Cambodia and Malaysia are natural allies, subject to our ability to garner their support on matters that concern international affairs; all of them, with others in East Asia and South East Asia, are concerned about the emergence of China as a potential superpower, that could flex its muscles to pursue policies towards total domination of the region. Hence, while pursuing a policy of engagement with the Peoples Republic of China, and seeking a solution to the border dispute, alignments with other countries in the region must be strengthened.

Similarly, close relations, including regional security arrangements, with the Central Asian Republics should be sought, and if brought to fruition, consolidated. Together with Iran, this could prove a decisive factor in stabilising the region. In West Asia, it would be to India's advantage to establish and nurture close links with Israel, to the extent of even entering into a bilateral

security arrangement. On the African continent, there are many countries with which India has strong links; the best arrangement would be to strike an alignment with regional organisations like the Organisation for African Unity and so on; we should not look for any sentimental links based on Mahatma Gandhi's association with South Africa.

Needless to say, all these alignments and affiliations, or security links, would carry greater conviction and credibility, if the South Asian region acted as one entity; that is the hope that will secure for the region the ability to concentrate on efforts directed towards the well being of its peoples.

JOIN

UNITED SERVICE INSTITUTION OF INDIA

Founded 1870

For the furtherance of

INTEREST AND KNOWLEDGE IN THE ART SCIENCE AND LITERATURE OF THE DEFENCE SERVICES

For particulars, write to

Director U.S.I.

Rao Tula Ram Marg, (opposite Signals Enclave)
Post Bag No. 8, Vasant Vihar PO, New Delhi-110057

Chinese Armed Forces

COLONEL NARENDAR SINGH

Introduction

International attention is increasingly focusing on China and modernisation of the Chinese People's Liberation Army. China holds the key to regional stability in Asia and is inching ahead to become a peer and competitor of the US for global influence in the next century. The extent to which it adapts its armed forces is thus of considerable significance. However, for India and its armed forces, China is an enigma. India is still not conscious of the impact of the changes in the security environment on its northern borders that are under dispute. Till the border dispute is settled it needs to be defended. Sino-Indian relations have been tense ever since a territorial dispute became a full scale war in 1962. Both nations have held several rounds of talks to ease tension on the international border, but nothing positive has yet come out of these. Both nations have decided to put the border problem on the back burner. Apart from territorial disputes, tensions have also arisen due to China's ties with other South Asian Nations, arms sales, unrest in Tibet, China's refusal to recognise Sikkim as a part of India, and rivalry for the leadership of the Third World. Indeed, no boundary agreement would ever reduce the need for troop deployments by the Indian Armed Forces along the border with China. For this reason, Mr. Jasjit Singh holds, "the appropriate and logical point of reference to define India's strategies would be in relation to the People's Republic of China" and not Pakistan as most western analysts do. India can ignore these changes only at its own peril.

In the early eighties, Chinese security analysts saw the Reagan administration's defence build up and resolve to oppose Soviet expansion in the Third World as creating a shift in the balance of power. The United States was seen as gaining an edge in the

* Col Narendar Singh is with the College of Combat, Mhow.

Journal of the United Service Institution of India, Vol CXXVIII, No. 534, October-December, 1998.

balance of power over the Soviet Union. Even with this advantage, Moscow and Washington were perceived as being in a 'global stalemate' that would perhaps continue into the 21st Century.[1] China also felt that the economic strength of Europe and Asia were increasing and that the overall trend was towards a multipolar system and a diminution in superpower pre-eminence. Beijing, nevertheless, viewed a multipolar system with reduced superpower influence as creating quite a distinctive danger in the future. The growing strength and relative independence of regional powers may increase the incidence of local wars.

An assessment of the People's Liberation Army's (PLA's) modernisation and likely future prospects has been attempted in this paper. However, a note of caution has to be sounded here. Given the closed nature of the Chinese military establishment and its low level of transparency, it is difficult to assess the extent of modernisation that has taken place.

PLA IN POLITICS

In China, the military elite have had a consistent involvement in the political life of the nation since the late Qing dynasty. This has taken a variety of forms over the centuries. The People's Republic of China became a nation after an armed struggle, first against the Japanese and later against the Kuomintang forces under Chiang Kai Shek. During the struggle, the PLA threw up leaders who assumed power after their victory in the civil war. The PLA is based on interlocking directorates of party and military elites evolved during the struggle. The PLA is under party control by various control mechanisms. The control is so effective that Perlmulter and Leogrande termed it as "the party in Uniform". Similarly, the PLA plays an effective role in party mechanisms and the government.

Since 1989, efforts have been made to subordinate the PLA to party control. In theory this has been the case since the Gulian conference in 1929 at which Mao stated, "Our principle is that party commands the gun and the gun must never be allowed to command the party"[2]. Deng Xiaoping had initiated a drive to force

the withdrawal of military elites from the civilian policy process during the 1980's. However, in recent years, especially after the incident at Tiananmen Square, the trend has been reversed. Admiral Liu Huaqing (ousted along with Mr. Qiuo Shi in September 1997 at China's People's Congress) was the first military man to be appointed to the Politburo Standing Committee since Marshal Ye Jianying and General Wang Dongxing served briefly during the late 1970's. The new cohort of PLA members on the Central Committee is generally younger and better educated. A large percentage of them hail from Shandong province and have served in East China Military Region. There is probably no more important personality in the party military arena than Mr. Jiang Zemin who is Chairman of the Central Military Commission, Secretary General of the CCP and President of the People's Republic of China.

Mr. Jiang Zemin has appreciated one of the cardinal tenets of being a Leninist leader - control of nomenklatura. He has consciously cultivated key constituencies in the armed forces and the military-industrial complex. Mr. Jiang has also at various times supported all the key themes of importance for the PLA.

(a) Politicisation and loyalty to the party.

(b) Professionalisation.

(c) Modernization of doctrines and equipment.

(d) Protection of state sovereignty and core national security interests.

(e) Research and development.

Mr. Jiang Zemin had supported Deng Xiaoping's teachings on 'army building in new era'. For consolidation, Mr. Jiang Zemin and his colleagues on the Politburo need PLA's support, which has resulted in an increased PLA role at the higher levels of policy making.

The PLA's increased influence has been felt in foreign policy issues, notably in relations with India, United States, Taiwan, nuclear testing, arms sales, technology transfers and multilateral

security. The whole realm of transparency and participation in international security regimes has been a bureaucratic battle ground between the PLA and the Chinese Foreign Ministry. The PLA has become a self-appointed guardian of Chinese sovereignty and nationalism.

There was concern in China after the East European militaries failed to prevent the collapse of Communism in their respective countries. An unrelenting campaign has been carried out ever since to ensure the PLA's "absolute loyalty to the party". The General Political Department of the PLA has pursued this goal relentlessly. There has been a parallel campaign to strengthen the PLA's 'discipline inspection' system to check growing corruption. Despite fluctuations in intensity, these efforts have not been dissipated. It remains a constant element of PLA life and is frequently touched on in speeches by PLA leaders, especially Jiang Zemin. As a result, the entire triad of the 'political work system'[3] in the PLA has been rejuvenated in recent years.

PLA's DOCTRINE

Doctrine is an important indicator of armed forces' intentions and capabilities. Ever since the PLA embarked on defence modernisation, the war fighting doctrine and strategic principles of PLA have undergone major changes. Efforts to improve the PLA began in the aftermath of the 1979 Sino-Vietnam border war. China had attempted to teach Vietnam a lesson. However, it learned more than what Vietnam did. China realised that its command, control, and communications were abysmal. It lacked in all facets of intelligence acquisition and analysis. There was a total lack of coordination and the three pincers into Vietnam resulted in heavy casualties. It was after this fiasco that Deng started carrying out a re-evaluation of the nature of modern wars and the threats facing China. At a pivotal conference of the Central Committee held from 23 May to 06 June 1985, he put forward the view that China no longer faced an imminent strategic attack from the Soviet Union and that this more peaceful environment - referred to as 'strategic transformation', afforded an opportunity to concentrate on economic reconstruction and modernisation of the country

and the PLA[4]. The PLA was told that it must not prepare for an early, 'major and nuclear war'. Instead of 'major war' or 'total war', it was told to prepare for 'limited war' or 'local war'. There was a total rethink on the role and tasks of the PLA. This review resulted in doctrinal changes.

Doctrinal Changes

The changes were not just in the nature of how to fight but also of what type and nature of war the PLA should be prepared to fight. This is of important concern to India. Communist China, from the outset, subscribed to Mao's doctrine of 'peoples war'. The first signs of doctrinal change were observed in 1980 under the guise of 'peoples war under modern conditions', which still retained many facets of Mao's doctrine. It emphasised the role of weapons and technology in modern war. In the same year the doctrine of local war was introduced, shifting the emphasis of the PLA's preparation from fighting 'an early war, major war and nuclear war' to fighting and winning local armed conflicts.

What made for this change? The assumption of inevitable global war that would pit China against the Soviet Union had remained constant till the first half of the 1980's. Then there was a drastic change in the world situation after the breakup of the Soviet Union which compelled the Central Military Commission of China to change its strategy from preparation for 'an early war, major war, and nuclear war' to fighting a limited and local war.

Why is local war more feasible? The main reasons, as assessed from writings of Chinese authors, observers and analysts, are :

(a) Nuclear stalemate between the two superpowers.

(b) Uneven development of military technologies amongst nations.

(c) Increasing magnitude of destructiveness.

(d) Increasing costs of modern wars.

(e) Efforts by superpowers to avoid direct confrontation.

(f) Territorial and ethnic tensions amongst third world countries also increase chances of local wars.

Since local wars are more likely to take place according to Chinese calculations, what then are its distinctive features? First, by nature, local wars tend to be more political than major wars. Also, military actions tend to be more mediated and constrained by political and diplomatic factors. General Xiong Gungkai, Deputy Chief of General Staff observed, 'Fighting is accompanied by talking'. Victory and defeat are more difficult to distinguish. Final resolutions tend to be achieved through diplomatic negotiation and political compromise[5] rather than on the battlefield. Secondly, local wars have limited objectives. It is not to annihilate the enemy, but rather to enhance diplomatic initiatives, intimidate the enemy psychologically, and lastly, acquire some economic resources. Local wars are also fought in controlled space and time. The adversaries are constrained by world opinion, and strive to avoid escalation. Local war also involves fewer troops, which makes it possible to 'achieve strategic surprise'. This would enable PLA to catch the enemy unprepared and achieve its objectives quickly and seek a cease-fire with victory on its side. The PLA advocates the use of air mobility and long-range raids, surgical operations using precision guided munitions in all three dimensions. Local wars also tend to be high technology oriented.

Chinese military journals have designated five types of local conflicts to be of special importance.

(a) Small scale wars restricted to contested border territories.

(b) Conflict over territorial seas and islands.

(c) Surprise air attacks against strategic targets in China.

(d) Defence against deliberate limited attacks into Chinese territory.

(e) Punitive attacks launched by China into enemy territory to 'oppose invasion, protect sovereignty or to uphold justice and dispel threats.[6]

The PLA carried out a reassessment of its doctrine in the aftermath of the Gulf War and after careful deliberations, adopted the new doctrine : 'limited war under high technology conditions'.

The Central Military Commission (CMC) directed the PLA to be prepared to fight local wars, medium level conflicts and major wars. The three types of wars advocated have certain differences. Small wars require light, highly efficient arms. The force would mainly be based on specialised units. Medium wars call for the combination of light and heavy arms, a quick-reaction force to ensure success. Operations against Taiwan are visualised to be in the medium war category. The big war requires the comprehensive power of large operational formations that combine various arms and services. Lastly, the nuclear option should not be excluded from all the three types of wars. The Central Military Commission envisioned a time frame for the implementation of training and equipment schedules. One is that the Army, till the beginning of the new century, should prepare for small wars, primarily on the border regions. The other is that since the threat of major wars has not fundamentally changed, too much emphasis on small and medium wars may erode the preparedness of the PLA to fight major wars. Despite these reservations, the doctrine of local war under modern conditions has been established and endorsed. It reflects a fundamental shift from 'people's war under modern conditions', and guiding changes in matters of organisation, training and state of preparedness of the PLA. The preparation for these three types of wars have common requirements, as under :-

(a) Personnel in the Army should be technology oriented to operate high technology weapon systems.

(b) Automated command, control, communications and intelligence (C^3I).

(c) Precision guided munitions.

(d) An extremely responsive support and maintenance system.

(e) Reserves.

This was soon followed by discussions on 'active defence'. This represented a shift in both strategy and tactics. While the concept of people's war and 'people's war under modern conditions' were essentially defensive and reactive, 'active defense' entailed offensive action. The term active defence can be traced back to Mao's 1938 philosophy 'On Protracted War'; however, the new use represents a break with past PLA doctrine. 'Active defence' does not involve strategic defence, strategic stalemate and strategic offence' - the three stages of conflict as envisaged by Mao. It also does not involve 'luring the enemy deep' to drown him in people's war. 'Active defence' advocates 'deterrence' by forward positioning of troops, engaging at the border, including pre-emptive strikes, with emphasis on the offensive. 'Active defence' would involve 'victory through elite troops', 'gaining initiative by striking first', 'victory over inferiority through superiority', launch strikes in depth and 'fight a quick battle to force quick results'.

"Limited War" remains the overall doctrine of the PLA and "active defence" its tactical operative doctrine. These two have been combined to formulate a new doctrine 'limited war under high technology conditions'. This theory emerged as a prelude to the Gulf War and was reportedly coined by Jiang Zemin. President Jiang then had noted, "The Gulf War makes us further see the functions of science and technology in contemporary war ... The function of science and technology cannot be ignored." Admiral Liu Huaqing also endsored the new emphasis on high technology war. Admiral Liu said, "In order to improve our army's weapons and equipment as soon as possible, we stress firstly, to establish the concept of using science and technology to improve the army, strengthen research, monitor latest technology and strengthen basic research with emphasis on electronic technology".

The new doctrine led to the laying of considerable emphasis on electronic warfare and its counter measures; C^3I, improved guidance, precision guided munitions, night vision devices, anti-ballistic missile defence and other advanced technologies.

Principles of Limited War under Modern Conditions

Two new sets of principles have been formulated to fight and win a limited war.

Strategic Frontier. To define the new geography of strategic competition that may lead to armed conflict, the concept of 'strategic frontier' has been advanced. Previously, strategy was designed for a war with the Soviet Union. This 'Continental Strategy' has now been supplemented by the new concept of 'strategic frontier'. Strategic frontier is defined as 'the living space of a state and a nation, and contracts with ebbs and flow of comprehensive national strength'. If China intends to join the league of superpowers, it must have a three dimensional frontier. This would enable China to establish and maintain the necessary security space, scientific exploration and technological development space, economic activity space, and the necessary conditions for preserving the interest and security of the state[8]. While the land frontier may generate local competition, the likely new conflict areas identified are space and the ocean[9].

Strategic Deterrence. China also formulated 'strategic' to 'real war' functions and rejected deterrence for three major reasons :

(a) Deterrence was thought to glorify brute violent force over the weak, thus justifying unjust wars.

(b) Deterrence has been associated with imperialist countries, and is analogous to military blackmail. If adopted, it would be contrary to the self-image being projected by China.

(c) Deterrence may be an empty threat if not substantiated by tangible power.

There is wide disagreement amongst Chinese analysts on deterrence. Some don't feel it is immoral and assert that regional deterrence is, in fact, effective since by mounting pressure on the enemy backed up by force, it achieves potential objectives without the use of force.

ORGANISATIONAL CHANGES

The new emphasis brought about organisational changes. The PLA closely studied the American concept of 'Airland Battle' and learned the importance of an integrated force and command structure that combined ground, air, close attack and mobile rapid reaction force. This called for total reorganisation. Since the PLA was structured in vertical hierarchies, inter-service and transregional operations were unheard of.

To meet the military need, four of the PLA's eleven regions were abolished, and the whole country regrouped into seven military regions. In 1989-90, the CMC brought all forces under its direct control. As a result, movement of troops larger than a battalion now needs the CMC's approval through General Staff Departments. In no case can troops be moved across military region boundaries without CMC approval. All weapons, ammunition allotment and release is now controlled by the General Logistics Department.

The Army has been organised into 24 Army Groups. Each group has approximately 50,000 troops divided into three divisions that has all arms and services under it. In 1993, artillery, armour, communications and engineers have been merged into single Service Arms Departments and placed under the direct command of the General Staff Department. Training of these new armies included simulated chemical and tactical nuclear warfare conditions. In 1993, the PLA conducted its first large-scale tri-service exercise[10].

Rapid Response Units

To fight limited wars, 'Rapid Reaction Units' or 'first units' were raised. These were classified on the basis of readiness levels according to mission, training, manpower and equipment. There are also special units known as *Teijing budui.* Initially, only battalion sized units were formed each comprising 500 to 700 personnel. Eventually it is intended that each group army will have one division designated as a 'Rapid Reaction Unit'.

Rapid Reaction Units have been organised to play a critical role. They are expected to fulfill four major tasks :-

(a) Striking at critical targets and creating a breach in the enemy's position.

(b) Strike at targets to paralyse enemy's combat potential.

(c) Seize crucial enemy positions.

(d) To speed up the tempo of a campaign by opening up new battle areas.

The creation of 'Rapid Reaction Units' highlighted the PLA's recognition that standing forces capable of quick, lethal response to military crises were essential in the revised doctrine. As Chinese analysts have noted, the timing of operations is often created by the diplomatic environment within which the conflict occurs. One analysis stressed that the timing of Israel's invasion of Lebanon was set by the World's focus on the war between Britain and Argentina over the Falklands Islands. Israel had to act swiftly. Beirut was under siege within three days and the operation completed within five days. The result was a fait accompli even before world opinion could be formed.

Modern limited war emphasises speed, mobility, lethality and C^3I technologies to direct swiftly moving combined arms combat units, integrating the roles of air, land and naval forces. Chinese military analysts have recognised that with the exception of Russia, and possibly India, the likely source of conflict around China's periphery didn't involve countries whose military forces had the capability to conduct high technology warfare.

The elite 15 Airborne Division was deployed during the June 1989 crisis, and is frequently lifted across the country for training. The purchase of 10 heavy transport aircraft from Russia in 1993 was intended to support the Rapid Reaction Units.

Performance ultimately depends upon training. The PLA is training more regularly and frequently, now on a year round basis

instead of the past convention of seasonal exercises. During training, emphasis is being laid on combined arms and joint operations.

Taken together, the organisational changes, improvement in quality of personnel, enhanced C^3I, improved training, creation of special forces and Rapid Reaction Units, and doctrinal changes have all added up to improve professionalism and greater combat readiness.

TACTICAL PRINCIPLES

To implement the new doctrines, some tactical principles have also been formulated. The first is 'winning victory through elite troops'. In contrast, Mao's doctrine called for people's war involving main, local and militia forces. This mass warfare, however, was called into question with the adoption of the doctrine of limited war. Since limited war would be fought along borders or on territorial waters with limited in-depth defence, mass mobilisation may not be necessary. The militia may continue to perform supportive tasks and functions as they are familiar with the local environment.

The second principle is 'gaining initiative by striking first'. The PLA traditionally followed the policy of 'active defence' under conditions of people's war. It envisaged a strong enemy offensive, who was to be lured deep into China and drowned in a people's war. The traditional 'active defence' now has a new meaning. It is argued that the stages of a modern war are no longer clearly definable as strategic defence, strategic counter-attack and strategic offensive. Hence, in a limited war, one who gains initiative will succeed. This, in turn, requires good intelligence about the adversary in order to identify his intentions, strike first and achieve the objectives.

The third principle is winning victory over inferiority through superiority. In this concept, the emphasis is on the concentration of forces and weapons in order to overwhelm the enemy in a localised war zone.

The fourth principle is, 'fight a quick battle to force a quick solution'. Traditionally, the PLA talked of a protracted war of attrition as it faced a strong adversary in the Soviet Union. This principle has now been questioned since, in a local war, China would no longer be necessarily in a weak position. Hence, to suppress the enemy and to gain the upper hand, it is absolutely necessary not to prolong the conflict. It is therefore essential that battle be fought with speed and the objective attained at the earliest.

Battlefield Tactics

The most important change in battlefield tactics that has taken place is in-depth strike. The PLA had always demarcated offensive and defensive actions. Offensive operations involved attacking the enemy, while defensive operations were to repel the enemy. The objective of the offensive was to annihilate enemy forces, or capture territory or another objective by carrying out breakthrough, encirclement, outflanking, penetration, and infiltration. In defence, the objective was to foil the enemy attack, denying territory or another objective. In the modernising PLA, the differences between offensive and defensive operations have been narrowed down. Firstly, modern weapons such as precision guided munitions and stand-off weapons platforms provide capabilities for both offensive and defensive actions. A new phenomenon may appear, viz., 'offensive versus defensive'. Secondly, due to the lethality of weapons, it is difficult to sustain static defence, which calls for the fusing of offensive and defensive actions to defeat a highly mobile enemy. Lastly, due to the increasing accuracy of modern weapons, units need to be dispersed.

From 1985-86, the new concept of 'in-depth strike' has been introduced. Earlier, in-depth penetration centered around forward positioning of troops to achieve rapid breakthroughs during offensives. The objective of in-depth manoeuvres is to weaken the enemy defensive or offensive capability, assisting in attacks to annihilate the enemy. The tactics include organised cover raids, helicopter attacks, battlefield concealment and infiltration. The concept is not auxiliary, but is an integrated 'all in-depth' combining attack, deep infiltration and rearguard actions. The formulation of the concept is based on :

(a) Availability of tactical missiles and long range artillery.

(b) Training of troops in in-depth break through.

(c) Development of PLA ground force aviation makes it possible to lift more troops deep into the positions of the adversary.

(d) It is central to the outcome of limited wars, since the destruction of important in-depth targets can paralyse the adversary's counter-attack capability.

The primary means to carry out in-depth strikes are fire power, spreading assault in-depth of forward positions after initial breakthrough, assault beyond forward positions simultaneously, and heliborne assault, all conducted by in-depth attacking forces.

CHINESE NUCLEAR FORCES

Role of Nuclear Weapons

Chinese political leaders have inherited a 'realpolitik' world view which permeates the dominant operational discourse in military affairs. It permeates Chinese Communist nationalist interpretations of modern Chinese history - a history of a militarily and economically weak China trying to fend off rapacious exploitation by large powers; and it permeates contemporary Chinese analysis of the nature of international politics as an intensely competitive struggle to acquire gains, in which military and economic powers are crucial determinants.[11] Given this world view, it is not surprising that China's decision makers have generally accorded a great deal of status and military value to nuclear weapons. Mao's comment in 1956 that, if China was not to be bullied in international politics it had to have nuclear weapons, and his remark in 1958 that without nuclear weapons, China would not count for much belied his more public statements about atomic weapons as paper tigers. Contemporary Chinese writings note that nuclear weapons help buy major power status.

Chinese leaders and strategists have also consistently affirmed the military value of nuclear weapons. Deng Xiaoping

stated in 1983 : "You have some nuclear missiles and we also have some. If you want to destroy us, then you yourself will receive some retaliation".

The Chinese have also stressed the role of nuclear weapons in overall military power. During the 70's and 80's, it was to deter the erstwhile Soviet Union. Their importance has not declined in the post Cold War period. As per a recent study, "only by possessing the great power to destroy the enemy can we decide the fate of the war, increase the awesomeness of our army and state, and produce a long term effective deterrent". Contemporary Chinese writers continue to note that nuclear weapons help buy major power status. As one study of 1993 on military command noted, Chinese Nuclear Forces are an 'important pillar in our country's great power status'.

Concept of Limited Deterrence

A realpolitik world view and confidence in the status and military value of nuclear weapons ought logically to lead to a more or less coherent doctrine that stresses the operational utility of nuclear weapons. It is a puzzle that although China exploded its first nuclear device approximately 34 years ago, till date it has no coherent nuclear policy. Chinese writings on nuclear weapons doctrine are virtually nonexistent, at least at the public level. This has led to debate in the West where some analysts assume that China has settled for minimum deterrence, while others contend that the Chinese have probably been influenced by Soviet doctrine,[12] and a third group insisting upon a combination of both.[13]

Over the last few years, a plethora of writing on China's nuclear doctrine has appeared. The 'Strategic Missile Force' began a research programme that focused on a range of topics including the form a nuclear war is likely to assume, command and control, and survivability of nuclear weapons. Out of these writings, a general pattern has emerged with most of the authors advocating a 'limited deterrence'. The Chinese have taken pains to differentiate between 'minimum deterrence' and 'limited deterrence'[14].

Limited deterrence entails the development of enough capability to deter conventional, theatre and strategic war and to limit and control escalation during nuclear war. This requires sufficient capability and a range of weapons to respond to any level of threat or attack. The response need not be one-to-one matching in numbers and technical capabilities, but merely enough to raise the costs of war dramatically for the adversary. It involves the ability to fight and inflict sufficient damage on an aggressor and if that fails, it assures an ability to prevent an enemy victory. Thus there is a distinct limited war fighting aspect in the concept. It advocates employment of nuclear weapons. This limited war fighting thinking has a number of elements in it.

(a) It rejects the concept of Mutual Assured Destruction - the key to the concept of deterrence. According to Chinese calculations, if nations cannot use nuclear weapons short of provoking mutual destruction, then deterrence is not credible.

(b) The basis of credible deterrence is the ability to fight a nuclear war. Recently, some Chinese writers have stated that, "Without the prerequisite that nuclear weapons could possibly be used in real war, then nuclear weapons can't be political tools and have deterrent value. If we don't have the determination and real capacity to dare to implement a nuclear attack on the enemy through powerful retaliation, then our nuclear power loses its deterrent value in constraining the outbreak of nuclear war". A recent book on military tactics argued "no matter whether one is a big state or a middle-ranked nuclear power, if one has nuclear weapons but does not use it in actual war then these cannot constitute a real deterrent".

(c) The list of targets that the Chinese consider is long. It includes :-

(i) Strategic Missile Bases.

(ii) Command and Control Centres.

(iii) Troop Concentrations.

(iv) Industrial Complexes.

(v) Political and Economic Centres.

(d) Limited Deterrence ideally requires a great number of accurate, survivable, mobile, penetrable strategic missiles including ICBMs, SLBMs, cruise missiles and tactical nuclear weapons. It also needs early warning and command and control systems.

(e) Lastly, to ensure success, as many targets as are possible should be destroyed in a first strike, before it is possible for the adversary to strike. This puts a premium upon taking initiative. Here the doctrine is contrary to 'no first use'. The Chinese Strategic Missile Force Command College argues that, 'no first use' gives China's deterrent a 'passive nature'.

As per the Chinese doctrine of 'limited deterrence', the launch of nuclear weapons has to be immediate and extremely rapid to ensure that no action is taken by the enemy. Sometimes this is referred to as launch-on-warning. The data on Chinese targeting and launch doctrine are not easily available in open literature.

Fissile Material

Current estimates of fissile material stockpiles suffer from a large margin of error. The Natural Resource Defence Council estimates that China may have enough fissile material to expand its current force two or three times (from 300 to 600 or 900 warheads). The Union of Concerned Scientists estimate that China has stockpiled three tonnes of highly-enriched uranium and one tonne of separated plutonium, enough for two hundred more warheads. Albright's recent estimates put the stockpile of Highly Enriched Uranium at 20 tonnes and 3.5 tonnes of Plutonium, enough for about 700 warheads. One study by two RAND analysts projects that, by 2003, China could have anywhere from 600 to 1500 warheads in total.

Delivery Systems

At present, Chinese delivery systems are based on predominantly liquid-fuelled land based missile forces. China has the rudiments of a triad, with land based missiles, a bomber force and a small number of submarine launched ballistic missiles. However, bomber force and submarine launched ballistic missiles are not in sufficient numbers.

A sustained modernisation programme for PLA Strategic Forces continues to improve their accuracy and survivability. The DF-41, a three-stage solid propellant ICBM with a 12,000 km range and a payload of 800 kg, is expected to be operational within a few years. It is a land-mobile system programmed to replace the DF-5. A new land-mobile, solid propellant IRBM, the DF-31, with a 8000 km range and a 700 kg payload, is also anticipated for initial capability within the next five years. JL-2, another version of the DF-31, has been designated for the PRC's follow-on SSBN, although when the vessel will be launched is not known. China also plans to develop multiple independently targeted re-entry vehicles (MIRVs) for its forces. China faces one major problem however : solid propellant missiles cannot carry the throw weight of the older liquid fuelled boosters.

Most of the Chinese missile effort is focused on tactical missiles with short ranges. However, the DF-25 has a range of 1700 km carrying a 2000 kg warhead. This weapon system should be operational within a decade. Two other systems have become extremely familiar : the M9/DF-15 with a range of 600 km and the M-11 with a 300 km range.

PRC STRATEGIC FORCES 1985-97

	1985	1990	1997
Manpower	Not Known	90,000	90,000
DF-5 ICBM (range 13,000 miles)	2X1*	2X1*	7X1*
DF-4 ICBM (range 4,750 miles)	4X1*	6X1*	10X1*
DF-3A IRBM (range 2,800 miles)	60X1*	60X1*	60X1*
DF-21A IRBM (range 1,800 miles)	nil	Not Known	10X1*
SSBN/JL-1 IRBM (range 1,800 miles)	1X12X1#	1X12X1#	1X12X1#

* with single warhead

\# one vessel with 12 missiles with single warhead.

PLA AIRFORCE

The PLA Air Force (PLAAF) has traditionally been the weakest leg of the PLA structure.[15] The PLAAF is still primarily of 1950-60 Soviet vintage. The fighter force of the Chinese consists of J-5, J-6/Q-5 and J-7 - the equivalents of MiG 17, 19, and 21, respectively. The bomber force of H-5s and H-6s (Soviet TU-16) are equally slow. The PLAAF possesses no inflight refuelling tankers or airborne early warning and command and control systems (AWACs). These are a high priority list and without these, there can be no force projection or serious interdiction capability.

China is developing the Jian-10 fighter bomber. It is a hybrid of the US F-16A/B with some Chinese and Israeli Lavi elements. China received a single prototype F-16 from Pakistan and has been working with the Israeli Aircraft Industries to develop the plane. Jian-10 could be in service by the turn of the century.

A close look at the PLAAF inventory of fighters, bombers and transport aircraft leads to an even more pessimistic conclusion. The new procurements have potential to develop a modern fighter force but only after the passage of time, and after absorption of foreign technologies. But even under the best conditions for power projections, the PLAAF would need AWACs, aerial refuelling systems and more heavy transport aircraft to lift the rapid reaction force.

The lack of power projection by the PLAAF does not, however, mean that the PLA cannot undertake operations. The PLA now possesses combined arms units capable of responding to a range of contingencies around China's borders.

PLA NAVY

The PLA Navy is the third largest navy in the world. It is roughly equivalent in size to the Russian Pacific Fleet. Significant improvements have been made in the PLA Navy since the 1980s. It includes 2,60,000 personnel, 52 submarines, 50 principal surface vessels, 870 coastal patrol craft, 121 mine warfare

vessels, 54 amphibious landing craft and 164 support and supply ships.[16] Of these, only the destroyers, guided missile frigates and submarines are modern.

The Chinese Navy has embarked on a massive modernisation programme. China is searching for bases in the Indian Ocean. The submarine force has received priority attention in recent years. The PLA Navy has five Han Class nuclear-fuelled attack submarines (SSN) and one Xia Class (09-1) SSBN. Recent satellite photographs indicate three of the five Han Class submarines have been modified with longer hulls to accommodate larger numbers of *Ying Ji* anti-ship missiles. The Xia Class carries 12 *Ju Lang*-1 solid fuel ballistic missiles (MRBM) each with a single megaton yield warhead.[17]

China recently purchased Russian *Kilo* Class submarines. *Kilo* Class submarines have a range of 6000 nautical miles and a speed of 7 to 8 knots when submerged. It can stay submerged at sea for upto 60 days.[18] The Kilo's carry 18 Type 53 torpedoes and can carry enough replacements to load 12 times.

What China needs for power projection is an aircraft carrier. The Chinese acquisition of an aircraft carrier is inevitable, if it wants to join the league of superpowers.

It is expected that some of the old ships of the PLA Navy would be retiring. But there will be a qualitative improvement with the addition of *Luau* and *Luda* III class destroyers, *Jiangwei* frigates and *Kilo* Class attack submarines and may be an aircraft carrier. In addition it will have the Hans.

Conclusion

The concept of limited war under high technology conditions adopted by the PRC has a direct bearing on India as the latter shares a long disputed border with china. Each of the concepts and techniques adopted by China would have a direct bearing on the conduct of operations by the Indian Armed Forces. These changes cannot be ignored by India. In any future conflict India will have to face a different PLA.

References

1. Banning Garrett and Bonnie Glasier, "From Nixon to Reagen : China's Changing Role in American Strategy", in Kenneth A. Oye, Robert. J. Lieber and David Rothchild (eds.), *Eagle Resurgent: The Reagan Era in American Foreign Policy* (Boston: Little, Brown, 1986), p. 283.

2. Mao Zedong, "Problems of War and Strategy", *Selected Works,* vol. 2, (Beijing Foreign Language Press, 1974), p. 224.

3. The political work system in PLA consists of General Political Department's Commissar system, the Party Committee System and the 'Discipline Inspection System'.

4. Deng Xiaoping, "Speech to Expanded Conference of the Military Commission", *Deng Xiaoping wenxuan (Selected Works of Deng Xiaoping),* vol.3 (Beijing: Peoples Press, 1993), pp. 126-129.

5. Nan Li, "The PLA's Evolving and Fighting Doctrine, Strategy and Tactics, 1985-95 : A Chinese Perspective", *The China Quarterly,* no. 146, June 1996, p. 447.

6. In 1986-87 a number of essays appeared in different journals which focused on the various types of potential conflicts.

7. David Shambaugh, "China's Military in Transition. Politics, Professionalism, Procurement and Power Projection", *The China Quarterly,* no. 146, June 1996, p. 281.

8. As quoted in Nan Li, n.5, op.cit., p. 450.

9. Since 1980, China has claimed sovereignty over three million sq. kms of maritime territory, which is codified in the Maritime Law passed by the National Peoples Congress in 1992. This territory covers 320 sq. kms of the continental shelf and the exclusive economic zone, and extends 1600 kms to include the whole of the Nausha (Spartly) Islands. This space is allegedly indispensable to China's economy as it contains oil, mineral as also to feed its population.

10. Tai Ming Cheung, "Quick Response", *Far Eastern Economic Review,* 14 January 1993, pp. 19-20.

11. See Alastair Ian Johnston, '*Cultural Realism : Strategic Culture and Grand Strategy in Chinese History* (Princeton: Princeton University Press, 1995).

    Realpolitik world views are associated with a keen sensitivity to real power capabilities, since these are critical for preserving the territorial integrity of the state, preserving domestic political order, and either deterring challenges to the preferred regional or global status quo or trying to change this status quo to enhance the power of the state. Contemporary Chinese security policy has exhibited most of the pathologies of realpolitik thinking,

constrained, of course, by low level economic and technological developments.

12. The doctrine of minimum deterrence being adopted by China has been advocated by many authors. See Alastair Ian Johnston, "Chinese Nuclear Force Modernization. Implication for Arms Control", *Journal of Northeast Asia Studies,* vol. 2, no. 2 (June 1983); Robert Satter, "Chinese Nuclear Weapons and Arms Control Policies : Implications and Options for the United States", *Congressional Research Service, Report for Congress,* 25 March 1994.

13. Chinese authors have described China's nuclear policy in various forms: minimum deterrence (zui di), defensive deterrent (fang yu), self defensive (zi ei) and anti-deterrent (fan weishe). Chinese authors are not yet in agreement on the definition of deterrence. Chinese leaders have been criticizing deterrence at public meetings and at the Conference of Disarmament.

14. Chinese authors have criticized minimum deterrence as inadequate to deter anything more than a counter-value first strike. They contend that Chinese authors state that number of people have a view that one only needs a few nuclear weapons to scare people and that is sufficient. This view is a product of a lack of understanding of the real meaning of nuclear deterrence and the relationship between nuclear warfighting and actual warfighting; it is based, harmful and we ought to take a lead and correct it. While maximum deterrence has been denounced as a doctrine of hegemonistic powers and is given its stress on first strike. Such a doctrine wouldn't be consistent with China's defensive intentions and may cause concern in third world.

15. Kenneth W. Allen, Glenn Krumel and Jonathan D. Pollack, '*China's Air Force Enters 21st Century'*, (Santa Monica, CA : The RAND Corporation, 1985).

16. See Military Balance, 1995-96, pp. 177-78.

17. *Janes Fighting Ships* 1992-93, p. 108.

18. Starr, Barbara, 'USA Keeps An Eye On Slow 'Kilo' to China', *Janes Defence Weekly* (25 February 1995), p. 3.

Open Source, Virtual and Public Domain Intelligence

MAJ GEN YASHWANT DEVA, AVSM (RETD)

PART I

Introduction

If a SWOT analysis were to be carried out of our intelligence apparatus, the intelligence doctrine, as is taught and intelligence management, as is practiced, weaknesses and threats will prominently stand out, and strengths and opportunities somewhat pale to insignificance. Our deficiencies are:

* The intelligence apparatus is not formalized. Absence of a charter and delineation of responsibilities leads to wasteful duplication, one-upmanship, a marked tendency to tread on each other's toes, and to pass the buck, in case of a failure.

* All-source intelligence is woefully wanting as a substantive element of achieving national policy objectives. Instead, too much of budget and human resources are wasted in gathering information, which is available from open sources or, is held by other intelligence agencies and the government departments within the country.

* Most of the analysis is subjective, because it relies on human memory of the precedent and the relevant.

* There is no national policy on cryptography and cryptanalysis.

* The intelligence community is grossly ignorant of the modern tools of information technology such as warehousing, archiving

---

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

Journal of the United Service Institution of India, Vol CXXVIII, No. 534, October-December, 1998.

and retrieval, and these have not been adopted because, apart from lack of awareness, there is absence of technically trained manpower within the intelligence organizations.

Intelligence is a product, the creation of which involves the classical processes, first, that of collection of raw material or data, both from open and classified sources; second, its manufacturing or conversion into information and removal of undesirable matter; and third, marketing or distribution to the consumers. All these three processes, as they pertain to intelligence, are in the throes of a paradigm shift. With the dawn of the 21st Century, these will undergo a sea change, heralding a widely different set of rules for the producers, practitioners and managers of intelligence than are valid as of now. Collection of the bulk of data would hardly pose a problem, particularly in the strategic realm. Much of it will be either available or sold in the open, whereas analysis will demand greater rigour and elbow grease, particularly cryptanalysis.

Of certain, non-military threats to security[1] will increase and become more potent. This will be a new ball game, demanding new doctrine, assigning different kinds of missions to the intelligence staff and field workers and fresh ways of training them. Whereas cryptography will be widely in use for e-commerce, Electronic Fund Transfer (EFT) and other Electronic Data Interchange (EDI), it will also be easily accessible to rogue actors, viz, cyber criminals, terrorists, hackers and crackers. Steele writes, " Perhaps the most important aspect of information operations in the 21st Century is that it is not inherently military; instead, civilian practitioners must acquire a military understanding and military discipline in the practice of information operations."[2] A corollary to this adage is that the cyberspace cannot be kept exposed to intrusion by rogue actors and, as the distinction between war and crime dissolves, the military needs to assume a greater role to defend cyberspace in peacetime. It must, therefore, be involved *ab initio,* in all facets of cyber security and intelligence gathering.

The thrust of this paper is that intelligence is going through a metamorphosis. It is one of the seven forms of information warfare and is inextricably linked to the other six, which are: command and

control warfare, electronic warfare, cyber warfare, hacker warfare, economic warfare, and psychological warfare[3]. Averring, what he calls, "information peacekeeping" as the purest form of war, Steele opines that it "must rely almost exclusively on open sources and services available from the private sector;" and "suggests crafting of a new doctrine of national intelligence that places critical classified contributions of the traditional national intelligence communities within the context of a larger global information community".[4]

Intelligence gathering, analysis and real-time dissemination have become more scientific and technical. So has intelligence estimate,[5] where it has been widely invested and influenced by *virtuality* in its varied manifestations. This demands knowledge of information technology, in particular analytical processes and data base management. Another discipline that will shape the future of intelligence is cryptology. The knowledge of codes and code breaking will be fairly common and widespread.

These, then, are the challenges that the intelligence community will be faced with in the next millenium, and will obligate novel ways to cope with.

Hypotheses

In the 21st Century, there will be a marked shift from Humint to Techint: the importance of the former will gradually wane, whereas that of the latter will, exponentially, increase.

Much of the useful intelligence will be available on cyberspace over open-source media. This will be true of information pertaining to even closed societies like China.

Information Technology (IT), Artificial intelligence (AI), Virtual Reality (VR) and Enhanced Reality (ER) will lend new molars to intelligence, and will accord it capability to analyze the intangibles e.g., feelings, mindsets and intentions.[6] Besides, these frontier technologies will endow humans the ability of speech recognition and breaking language barriers,[7] which, hitherto, have been the principal limitations, beset by non-availability of language experts, and wastage of too much time in translations and transcriptions.

There is a paradigm shift from exclusive government domain intelligence to public domain intelligence. As businesses globalize and customers proliferate, economic and technological intelligence will acquire greater importance and require wider dissemination; in other words, the intelligence market will expand belying all expectations.

Emergence of information highways, lack of stringent cyber laws, and absence of legal experience and universality in their application, and adoption of the "Right to Information" as the fundamental right will breed professional hackers and crackers, on the one hand, and put counter intelligence and electronic security to greater burden, on the other.

PARADIGM SHIFT

From Humint to Techint

As technology leaps forward, it will replace human intellect in many ways. It, already, has a distinct edge in memory, storage, easy recall and what is highly significant, objectivity. The Humint is prone to lie,[8] whereas Techint is unbiased, impersonal and scientific, although admittedly either can be duped. The former is invaluable in counter-intelligence in keeping a check on moles and insiders, whereas the value of Techint lies in remote collection of intelligence, sensor diffusion, virtual analysis, faster processing and dissemination in near real-time. The two should complement each other, with gradual lessening of the importance of the former.

With exponential growth in technology over the past few decades, we have the ability "to transfer more information, at a much faster pace than hitherto, to more people, and in a customized manner than ever before."[9] We have the ability to gather and process unheard of volumes of data to derive potentially useful information. There are estimates that by the year 2008, it will be possible to have almost complete battlefield awareness of a region 200 miles by 200 miles in a military conflict.[10] If that is the prognostication for the military aspects, imagine what will be possible for non-military aspects.

From Data to Wisdom

Information is a notch on the spectrum with raw data on the low-end and wisdom on the high-end. Raw data, when processed, becomes information; information minus noise (irrelevant substance) is intelligence or understanding; intelligence plus experience is knowledge; and knowledge, when further processed, endows erudition and the ability to philosophize, and so becomes wisdom. This is illustrated below:[11]

	Processed		
Data	----------	---------->	Information.
Information	(-) Noise	=	Intelligence.
Intelligence	(+) Experience	=	Knowledge.
Knowledge	(+) Judgement	=	Wisdom.

Information has both a narrow meaning in terms of processed data and a wider more expressive meaning that spans from raw data to true wisdom.[12] Intelligence can be either perceived as a midway point between data and wisdom, or can be interchangeable with the term "information." Its span of interest is certainly not confined to what pertains to the enemy, or the target countries and groups, but also embraces the environment and own forces.

Technology has come a long way from processing data to processing knowledge. Knowledge is power in the information age, and we have set a goal of becoming a superpower in IT in a decade.[13] We can gain information advantage *vis a vis* our adversaries and competitors, only by observing what is happening, understanding the nuances and the dynamics of a situation, deciding what to do, and then acting on it in quick time.

From the Government Domain to the Public Domain.

In the 21st Century, intelligence will not be the monopoly of the government. A few years hence, there will be little difference between intelligence systems in the field, those in the police control room, or in the corporate office of a private enterprise. As it is, the hardware, viz, the processor and the communication interface are

the same; so are the office automation suites. The difference is only in the application software, content and its bias. Besides intelligence pertaining to their particular specialty, all government ministries and departments will need non-exclusive, shared and generic intelligence. In the case of the MOD and the Defence Services, this will be all the more true, and certainly more demanding. A visible trend in some of the developed countries is privatization of intelligence and hiring of professional hackers and crackers.

The universal connectivity and the "Right to Information" will, in all likelihood, lure the media to emerge as, both, the repository, and the major consumer of intelligence. Intelligence agencies will need to pay greater attention to public relations and media management. Investigative journalism is both a threat and an opportunity. It can be guided, although, admittedly, it would need a high degree of finesse.

From Guesswork to Scientific Analysis.

AI, VR and ER are supporting concepts, and a solid foundation for informed policy-making, judicious acquisition management, effective contingency planning and execution, and timely public consensus-building.[14] Intelligence is a function of the human mind, which is divided into cerebrum, cerebellum and medulla. The cerebrum performs the computation functions and is the highest seat of decision-making. Raw data captured by the sensory organ travels from neuron to neuron in a digital mode. On reaching the cerebrum, data diffusion takes place and the data is strained, treated and preserved. The intelligence or, the processed information, sans noise, is then passed on to the action addressees, the human organs. Reasoning, memory, experience and judgement are functions of the cerebrum, which the machine is learning to replicate through processing, storage, retrieval, recall, simulation, AI, and VR, and has achieved a spectacular degree of success. The other two parts of the brain are no less important. The cerebellum performs the control function as in C^2 and its responses are automatic. The medulla takes over decision-making in an emergency and responds to dangers and threats in real-time.

Intelligent systems encompass several hardware and software features with the ultimate objective of building mechanisms that autonomously adapt their functionality and enmesh without human operator intervention or preprogrammed logic constraints, in response to changing requirements. Intelligent systems can be implemented in software on general-purpose digital computers or on specially designed analog or hybrid analog/ digital neural networks and fuzzy logic chips. Military applications are in smart sensors and autonomous platforms and weapons, according them potential for greater mission effectiveness. Intelligent systems are needed as part of battle management and C^{3}I systems to increase ability to detect, localize, and effectively engage enemy forces in a high-threat, target-rich environment. There is worldwide research in machine intelligence, much of which is still theoretical and in the area of machine cognition, per se.

COLLECTION

Open-Source Intelligence

Open sources are by definition sources that are legally and ethically available to anyone.[15] The Indian establishment routinely spends large sums of money on gathering intelligence, which is available for the asking on the Internet, and can be freely downloaded. Some of the sites have a vast cauldron of useful information, e.g., Intelweb,[16] antiOnline,[17] and the officially put out web pages by intelligence agencies. There are open discussions on intelligence issues,[18] Internet Relay Chats (IRC), and the Bulletin Boards put out by, both, official and non-official organizations. Besides, publications, like *Jane's Intelligence Review*, the IDSA's *Strategic Digest*, *International Defense Review*, and *Jane's Defense Weekly*,[19] have a fund of useful material, but ironically, these are read largely by the retired, seldom by the serving. Commanders, at all levels, are dismissive of the opportunities inherent in open-source collection, and the challenge of analysis conducted by them; instead, they rely on mundanely churned out intelligence summaries. In the US, as elsewhere, much concern is expressed on expensive and narrowly focused collection systems. This failing is highlighted in every major review that the US Intelligence Community [20] has been subjected to.[21]

It is estimated that less than 10 per cent of what is collected on both the imagery and the signals sides of the technical collection function is processed and disseminated timely.[22] The recent intelligence goof-up by the CIA, in not detecting India's preparations for her nuclear tests, is a telling case. The former Vice Chairman of the Joint Chiefs of Staff, Admiral David Jeremiah, who headed the panel that investigated the intelligence lapse, acknowledged that, "both the intelligence and policy communities had an underlying mindset."[23] The analysts assumed that the BJP would not follow through with their election campaign rhetoric once in office.[24]

The Commission on Intelligence, a bi-partisan endeavor that included members appointed by both parties of the House and Senate, as well as members appointed by the Administration, offered two pertinent recommendations.[25]

* Firstly, the US Intelligence Community is "severely deficient" in its access to open sources, and this should be a "top priority" for Director Central Intelligence's (DCI) attention as well as funding.

* Second, the consumers of intelligence should not refer requirements to the US Intelligence Community when they can be answered "predominantly" through open sources, but rather should create their own open source intelligence.

These two recommendations clearly document the fact that the vast majority of usable, relevant, information necessary to support policy-makers, acquisition managers, and commanders is available in unclassified form from private sector sources. The greatest obstacle to improved use of open sources is not that of access, which is freely or inexpensively available to all, but rather that of acceptance.[26]

What is true of the US is equally true of India. To us, a variety of open sources are available, which can be exploited effectively. We have the advantage of sharing the English language with a large part of the globe, then there is a sizable NRI population who can be a good source of legitimate technical and commercial infor-

mation. There are common interests in sharing intelligence about threats other than the military; common training programmes, seminars and symposia in which the academic and professional communities interact and exchange information. Within the country too, information is widely available, in government departments and other sources, viz, the media, universities, information brokers, and businesses, both in public and private sectors. "It is absolutely essential that each intelligence producer and consumer has a "map" of this larger knowledge terrain, and a strategy for assuring the ability to discover, discriminate, distill, and digest critical open-source information and intelligence."[27]

Those familiar with the existing security and isolationist policies of the military and elitist behaviour of the civil policy makers will recognize that there are enormous obstacles to treating the new customers as equal partners in intelligence sharing. Further, a crass ignorance of what is available in the private sector and with the NGOs, and a reluctance to reveal the intelligence agenda or divulge its rather obvious interests, cause many to shun the benefits of open-source intelligence.

High-tech Intelligence

While being critical of all the major intelligence agencies,[28] Goodman has a word of praise for the NSA. He writes, "Only the National Security Agency (NSA) earns consistently high marks for protecting the nation's security and, at the same time, contributing to its technology. NSA not only dissented during several international crises, when the CIA and the Defence Intelligence Agency (DIA) had it wrong, particularly in the Middle East and East Europe, but has been on the cutting edge of US technology for decades. NSA contributed directly to the first transistorized computers, semiconductors, high-speed circuitry, and microelectronics; it financed some of the supercomputers designed by Seymour Cray and developed technology that may crack the ultimate code –that of the DNA, the genetic blueprint of life itself. NSA may be the largest and most expensive intelligence agency in the history of civilization, but it is a model of innovation and invention."[29] Goodman's observations are a testimony to the supremacy of

Techint. We must also draw a lesson from the fact that in the US, this agency functions under the defence, as indeed it should.

The US spends 10.5 billion dollars annually on tactical intelligence as compared to 3.1 billion dollars on the CIA, 2.0 billion dollars on the DIA, 6.2 billion dollars on the National Reconnaissance Office (NRO) and 4.0 billion dollars on the NSA.[30] For tactical intelligence too, the bulk of the money goes to Techint, which in our case is grossly neglected. All-source intelligence, be it at the national, strategic or tactical levels demands greater attention on acquiring assets for early warning, surveillance, reconnaissance and target acquisition. Three areas, in which new innovations have made an impressive debut elsewhere, and where we are still floundering, are:

Global Positioning System (GPS). Intelligence about own position is a vital requirement. GPS technology has its roots in US Department of Defense (DoD) programmes and now thrives in the commercial sector. GPS is a space-based radio-positioning and time transfer system. It provides extremely accurate, 3-dimensional position, velocity and time (PVT) determination. It has two versions, the military and the civilian. The former is highly precise but is not available to us. GPS is on a worldwide common grid, which can be easily converted to local datums. It is passive and permits all weather operation. It provides real-time and continuous information, and survivability in a hostile environment. Dozens of vendors are working on tightly integrating GPS technology and mapping software with notebooks, handheld computers and cellular phones.

High Resolution Direction Finding. This has been included as a strategic electronics thrust area for the 9th Five-Year Plan.[31] Lack of angular and spectral precision in direction finding is a serious gap in exploitation of SIGINT and Electronic Support Measures (ESM) systems. The requirement extends to all frequency bands of Electro-Magnetic (EM) Spectrum and different types of electronic emissions. This requirement is for crime detection, security monitoring and intelligence gathering and is not exclusive to wartime applications. We experienced its inescapable need during operations in Sri Lanka and continue to feel the

handicap in tracking the militants in Jammu and Kashmir. The intelligence agencies have earned enough ill fame in chasing the likes of Prabhakaran and Veerappan. We need to wash off this stigma by acquiring precision capability in Direction Finding (DF), besides Speech Recognition.

Data Fusion. This is another high-end technology, requiring competence building, which has been included as a thrust area in the current plan.[32] Derivation of a tactical picture showing identity and position of all friendly and hostile forces in a combat area is a distinct requirement in C^2 systems. Likewise, data collected by a multi-sensor signal intelligence system has to be culled and blended in real time with a view to forming an intelligent picture or as an ESM support system as a prelude to mounting electronic counter measures (ECM) or electronic counter counter measures (ECCM). An example is Nemesis Fusion System of the UK, which produces a fused Recognized Air Picture (RAP) in real time, culling inputs from a wide variety of combat systems.

ANALYSIS

Cryptanalysis

Cryptanalysis is the most critical facet of intelligence. Cryptology functions fall under two heads, cryptographic and cryptanalytic. Both these were highly classified hush-hush affairs of the government. The former was handled by the communications man; the latter by the intelligence; and the twain never met. In a complete reversal of the process, and in tune with the times, the Government of India has issued instructions that, "cryptology and cyber security knowledge and experience developed by Defence establishments shall be suitably transferred to the civilian information security agencies for wider dissemination in the country to increase information security, network security and to bring about a greater degree of secure use of Electronic Fund Transfer (EFT), digital signatures etc."[33]

In the Services, cryptography was dealt with by semi-experts, risen from the ranks, who were employed in such tasks more because of experience than any worthwhile in-depth

knowledge of the subject. Their merit, however, lay in high integrity and an immaculate sense of secrecy. Cryptanalysis and cryptographic research were, by and large, handled by the Scientific Analysis Group (SAG) and the Joint Cipher Bureau (JCB). It is only recently that some universities have adopted these vital subjects for scholarly research and research papers have started appearing in academic journals.

In the US, these functions are the responsibility of a single agency, i.e., the NSA. It is tasked to provide timely, user-friendly, and reliable signal intelligence, on the one hand, and information systems security and counter-intelligence solutions, on the other. A similar organization is badly needed in India, too. It could furnish the leadership, provide services to protect national security and sensitive information, foster a broad zone of cooperation between government and industry, establish public key infrastructure technology and standards, and expand collaboration on strategy for containing information system vulnerabilities.[34] It could also run a centre for technical excellence for information operations. The centre could be endowed with warning capabilities, and help in achieving information superiority by providing technical expertise to exploit adversary's information and information systems while defending own.

The threat to our information systems will grow in the coming years as cyberspace expands, the enabling technologies to attack these systems proliferate and hostile groups and countries, not well disposed to India, develop new strategies that incorporate such attacks. The cryptosystem that we opt for is a vital national resource and we have the right kind of expertise to develop it. The problem, however, lies in its integration with the planning and conduct of military operations, and its availability for EFT and prevention of fraud. It is fully recognized that activities like electronic commerce, banking, stock market, insurance, even medical services cannot be conducted online, unless there is total confidentiality and protection from disclosure and tempering. While encryption technology can help protect business secrets and unauthorized release of personal information, it also can be used by terrorists, drug traffickers, and other criminals. We may draw

lessons from the US Administration's insistence on the adoption of escrow approach[35] and the arguments that it has been putting forward to the legal authorities in defence of retaining cryptanalytic capabilities for law enforcement. "Clipper Chip"[36] developed by the NSA has escrow provision; it seeks to allow the law enforcement agencies to monitor any private conversation or confidential data on financial and other records. Although approved by the Administration, this has been challenged in the courts.[37] The US Administration claims that there are no restrictions on the domestic use of cryptography, but export controls are necessary for national security reasons.

It is not easy to decode messages as is commonly believed. An approach that is frequently suggested is to provide the law enforcement agencies greater computing power. It is true that, theoretically, all encrypted electronic information can be decoded if enough computing cycles are applied, but in practice this does not work. The US Administration advances five reasons for its unworkability, viz:[38]

* First, it relies on mathematical theory, not operational reality.
* Second, after the decoding problem is isolated, acquiring a machine to decode is neither easy, nor inexpensive.
* Third, this approach betrays a misunderstanding of how crimes are prevented.
* Fourth, this approach fails to acknowledge the volume of messages that could need decoding.
* Finally, revealing the precise capabilities of law enforcement agencies to decode messages, as would be necessary in order to present the fruits of that work as evidence in court, could provide a tutorial to criminal elements bent on eluding law enforcement.

According to a report prepared by the National Research Council for the US Congress, entitled, "Cryptography's Role in

Securing the Information Society," cryptography helps rather than hinders national security by protecting elements of the civilian infrastructure -- stock exchange, banking, telecommunications, air traffic control and so on."[39] The Committee even though constituted of individuals with diverse interests and stakes arrived at a consensus in recommending private cryptography and felt that the "current national policy — which discourages the use of cryptography despite its many valuable applications — can at most delay its spread."[40] Even if the US Administration accepts the report and acquiesces to its recommendations, it cannot be a model for us to emulate. We do not have the resources to monitor the abuses. As it is, we find it difficult to prevent the likes of Sriperumbudur and Purulia. With access to private cryptography, terrorists and militant groups would wreak havoc.

The US cryptography policy and the arguments of its supporters and detractors are relevant to our discussion too; for their similarity of approach to investigation of crime and terrorism and contrariety of interests to key recovery encryption as part of US export control strategy. The Clinton administration is cognizant of the new opportunities that the IT offers to the enemies of the state, crooks, swindlers, embezzlers and other anti-social elements like porno peddlers and drug traffickers. It is willing to promote cryptography, but has serious reservations on unbridled spawning which may degenerate into illegitimate use, on the one hand, and hinder the state in preventing, investigating and prosecuting crime, on the other. Technology serves the enterprising, both, the benevolent and the malevolent kind. It can be of great help to the latter, in prying and spoofing trade secrets, individual's confidential records or the state's sensitive documents. There is a growing recognition "affirmed by the National Academy of Sciences, that the use of encryption to conceal illegitimate activities, poses a problem for society as a whole, not just for law enforcement and national security."[41]

These ground realities are equally applicable to the Indian setting, adversely accentuated by the fact that there is rampant ignorance and apathy towards the issues involved. Besides, the kind of computing power which is required for SIGINT[42] is just not

available. The LTTE used simple encryption to conceal their transmissions, yet it took time and effort to decipher them, and the public is still not sure whether this inadequacy led to Rajiv Gandhi's assassination. Wiretaps are frustrated even in the case of the US and despite an extensive code-breaking set-up, they have run into failures. Cryptanalysis is a gruelling and frustrating job. Besides, the entire issue is shrouded in the question of legality and ethics. Tapping of telephone lines and eavesdropping invite emotional repulsion too. It is widely believed that unfettered powers to the State are likely to be abused and the targets are invariably bound to be political opponents.

Virtual Environment and Analysis

In the 21st Century, we shall be operating in virtual environment, with a hierarchy of powerful computing capabilities widely available to individuals, organizations and intelligence production services. Computers will be physically interconnected to very high-bandwidth networks, viz, Local Area Network (LAN), Wide Area Network (WAN), Metropolitan Area Network (MAN) or Intranets. It will enable large volumes of near-real-time multimedia information to be produced and distributed very quickly to selected consumers and on a "pull" basis to the rest of the community.[43] Advances in remote telecommunications access technologies allow instant connectivity to these resources without a permanent affiliation.

Sophisticated interfaces that "incorporate advanced cognitive ergonomic design concepts"[44] will certainly make a debut. The advances in Human Computer Interface have enabled Social User Interface (SUI) that anticipates information requirements depending on the types of problems being worked on, the context and past requests. They support a variety on collection and communication, synthesis and visualization *Knowbots*.[45] *Knowbots* and other software agents greatly simplify the use of information technology. They act as templates that filter the information in accordance with prescribed rules and criteria. They are not just text retrieval processes but focus on concepts. Most of these *Knowbots* are active even when the user is not logged in.[46]

Alexander Chislenko suggests that it seems possible to augment human senses with transparent external information pre-processors. He calls it "Enhanced Reality" (ER). It could act as a highlighter whereby an object of potential interest could be made to stand out from its environment to catch attention. "The filters can amplify or otherwise differentiate, i.e., move, flash, change pitch, etc."[47] to give enough time to focus on the object. "While such filters do not have to be transparent, they may be a way to provide a natural feeling of augmented perception."[48] Some non-transparent filters have found their way in military applications. Called "target enhancements,"[49] they allow military personnel to see the enemy's tanks and missiles conspicuously outlined and blinking.

Perception utilities could "build on existing techniques that present us with recordings of the past and forecasts of the future to help people develop an *immersive trans-temporal perception* of reality."[50] One may expect that in the 21st Century, there will be greater interest in the application of ER technology to improve interaction with real objects, while VR with 3-D simulation can provide training environments. It should be possible to virtually visit the Corps Commander's Conference in Rawalpindi as ER entities endowed by the archived and live recordings of the physical world, and be privy to the decisions, e.g., predict which corps commanders would resign in support of the ousted Chief. One could visualize intelligence analysts interacting through ER extensions as if they were parts of the real world, thus elevating the ER entities from individual perceptions to parts of shared, if not objective, reality.

A degree of expertise has already been acquired in video morphing.[51] A time may come when, to an intelligent observer, an object of interest will be entirely artificial, with no inherent "natural" appearance. Image modification techniques may then be incorporated into integrated object designs that would simultaneously interface with a multitude of alternative intelligent representation agents.[52]

The implementation of ER extensions would vary depending on the available technology. We may be at the threshold of an era of comprehensive and conscious self-engineering. The advance-

ment of human input processing has immense possibilities. "Migration of human functionality beyond the boundaries of the biological body, will make human identity increasingly *exosomatic* i.e., non-biological."[53]

With ER, Techint will acquire a new face and emerge as one of the most sought after intellectual pursuits. Today, hacking and cracking is popular, tomorrow, it shall be the VR and ER analyses. *Agents provocateurs* and 007s are out of fashion, and soon may be jobless.

(To be Concluded)

Notes

1. In his introductory remarks to the seminar organized by the United Service Institution (USI) Of India and Jawaharlal Nehru university (JNU), Satish Nambiar describes the following as non military threats to security: (i) International terrorism, (ii) Ethnic sub-nationalism, (iii) Economic pressures and trade wars, (iv) International trade in narcotics and narco-based terrorism, (v) Environmental degradation, (vi) New emerging infectious diseases like HIV/AIDS, and (vii) Disinformation or psychological warfare. See "Non-Military Threats to Security in South Asia," Proceedings of a Seminar organized by the USI and JNU on December 7-8, 1995, p. 2.

2. Robert D. Steele, "Information Peacekeeping: The Purest Form of War," in *Cyberwar: Myths, Mysteries and Realities*, (forthcoming in Dearth and Campen, ed. Final draft 3.9 dated 11 March 1998). Steele is founding President of Open Source Solutions Inc. (OSS Inc.) in Fairfax, Virginia and a former Marine Corps intelligence officer who also served in three of the four directorates of the CIA. See *www.oss.ne.*

3. Martin C Libicki, *What is Information Warfare?* (Washington DC, National Defense University Press, 1995), p. x. Libicki maintains that "principles of intelligence warfare need to be updated to reflect the broader scope of information warfare."

4. n. 2.

5. Intelligence estimate is the appraisal of available intelligence relating to a specific situation or condition with a view to determining the courses of action open to the enemy and the order of their adoption. It is the view of the author that this is best done by computer, which is not only highly objective, but also can access all-source input from a large number of interconnected databases.

6. The author disagrees with the approach paper that Humint is invaluable and inescapable in discerning intangibles and feels that the machine will certainly acquire this capability.

7. Information filtering and augmented perception technologies are being developed, which will divorce content from representation and provide sentient translation programmes with semantic capability. A translation agent would interactively convert natural language texts to the semantic lingua franca and interpret them back according to a given user profile. Intelligent software translators would become increasingly popular and would make language as liberated as minds. Flexible translation will help integrate language, currently separated by linguistic and terminological barriers. See Alexander Chislenko "Intelligent Information Filters and Enhanced Reality" *www.lucifer.com/~sasha/homel.*

8. See Earnest May, "Studying and Teaching Intelligence," keynote address to the Symposium for Teaching Intelligence which was sponsored on 1 and 2 October 1993 by CIA's Center for the Study of Intelligence, *Studies in Intelligence*, 1995 Edition, Vol.38, No 5, *www.odeigov\csi.* It unequivocally suggests that many intelligence officers are trained to be skillful liars.

9. Daniel E Magsig "Information Warfare in the Information Age" at *dmagsig@seas.gwu.edn* or *magsig@comm.hq.at.mil*, December 7, 1995.

10. Martim C Libicki, "Dominant Battlefield Awareness and its Consequences," First International Symposium on Command and Control, *Research and Technology*, June 1995, p. 550.

11. Yashwant Deva, "Information Infrastructure: Harmonizing Commercial and Social Objectives," a paper presented at the 39th Annual Technical Convention of IETE held at New Delhi on October 1, 1996 and published in the proceedings of the seminar, *Global Information Infrastructure: India in 2005* and *Technical Review,* Vol. 13, No. 6, November-December 1996, p. 39. See also David S Alberts and Richard E Haynes, "The Realm of Information Dominance: Beyond Information War," n. 10, p.561, wherein similar views are expressed, viz, "Observation produces data, classification of data yields information, the ability to explain information yields knowledge; and given knowledge ability to prescribe indicates attainment of wisdom."

12. Alberts et al, ibid. See also n. 9.

13. See Planning Commission Resolution, No. IT-TF/5/98 of 25th July 1998 given in Gazette of India Extraordinary Part 1, No. 160, 25 July 1998. It states, "Towards the attainment of the inspiring mission placed by the Prime Minister before the nation to make India an Infotech superpower in the shortest period of time, an effective awareness building campaign shall be launched for the removal of all infrastructural bottlenecks and creation of a nationwide IT culture."

14. n. 2.

15. Ibid.

16. Jane's Intelweb is a service that monitors news sources the world over and presents open-source intelligence under two heads, "Intelligence Watch Report" and "Terrorism Watch Report."

17. AntiOnline site puts out exploits of hackers.

18. Some of the sites and home pages of interest are: "Canadian Security intelligence Service", www.csis.scrs.gc.ca; "Secret Kingdom: UK", www,cc.umist.ac.uk\sk; "Milnet Intelligence Agencies," www.onestep.com\milnet\intell; "US Intelligence Community", www.odci.gov\ic;.besides others, e.g., www.etherzone.com; www.primenet.com; and www.opengov.uk\co. The US Army runs an intelligence centre of which official bias is denied. Its listings cover the broad areas of open sources, area studies, special interest topics, private organizations and associations, individual contributions and educational technology resources

19. Besides CIA, the US intelligence community consists of 12 intelligence agencies, of which eight are under the DoD, viz, Defense Intelligence Agency (DIA), National Security Agency (NSA), National Imagery & Mapping Agency (NIMA), National Reconnaissance Office (NRO), Air Force Intelligence, Army Intelligence, Marine Corps Intelligence, and Navy Intelligence; and four are non DoD, departmental agencies, viz, those belonging to the Department of State, Department of Energy, Department of the Treasury and Federal Bureau of Investigation (FBI)

20. During the past 25 years, there has been a sizable amount of serious research on intelligence. Several new journals and periodicals have come up. Some of the examples, other than those mentioned in the text are: *Intelligence and National Security*, edited by Christopher Andrew and Michael Handel, *International Journal of Intelligence and Counter Intelligence*, edited by F. Reese Brown, and *Defense Intelligence Journal* of the Joint Military Intelligence College. These journals are rich in content and vie with any other research in comparative fields

21. Two recent reports that underscore this point are: first, "Preparing for the 21st Century: An Appraisal of U.S. Intelligence," the report of the Commission on the Roles and Capabilities of the United States. Intelligence Community, popularly known as the Brown Report; of 01 March 1996; and the second, "Intelligence Community in the 21st Century," a Staff Study, House Permanent Select Committee on Intelligence of 04 March 1996.

22. n. 2.

23. See Sid Balman Jr, *United Press International (UPI)*, June 2, 1998. The Jeremiah panel said that the U.S. intelligence community comprising of the CIA and 12 other executive branch agencies should be streamlined, work in a more coordinated way, encourage more creative analysis and develop better hardware to sift through a sea of information daily.

24. Ibid.

25. "Preparing for the 21st Century: An Appraisal of U.S. Intelligence" n. 21

26. n. 2.

27. Ibid.

28. See Melvin A. Goodman, "The Intelligence Community: Time for a Major Overhaul" America's Intelligence Community is a creation of the Cold War that now includes thirteen secret agencies. It employs over 150,000 persons and spends over $30 billion a year.

29. Ibid.

30. Ibid.

31. "Report of the Study Team on Strategic Electronics for the 9th Five Year Plan 1997-2002, " *Department of Electronics, Government of India*, June 1996.

32. Ibid

33. Section 104 of the Gazette, n. 13.

34. See "US Intelligence Community," www.odci.gov\ic.

35. Escrow is an acronym for allowing authorized entities to invade the privacy of the users. The escrow approach is linked to *Cryptopolitics*, a term coined by Yashwant Deva, which suggests that code-making, code-breaking, and cryptography standards are tainted with politics, particularly in the US where export control restrictions have a highly smothering influence on vendors' sale of cryptographic systems, equipment or technology to Third World countries for use in electronic commerce. Also see Yashwant Deva, "National Perspective on Information War," *USI Journal*, January-March 1998, p. 55.

36. Cliper Chip is a state of the art, microcircuit, designed by the NSA. While providing a hardware/software solution to cryptographic protection of individuals and industry, it incorporates key escrow system, for wiretap, to prevent criminals from using it for unlawful and anti-state activities. See Press Release, issued by the White House Office of the Press Secretary, of April 16, 1993.

37. *Washington Post*, July 17, 1996.

38. "US Cryptography Policy" *Fact Sheet*, USIS, July 26, 1996

39. See "Washington Watch," *IEEE Spectrum*, July 1996 quoting a statement by Kenneth W Dam, Law Professor of the University of Chicago and Chairman of the 13 member committee that produced the report at a press conference held on May 30, 1996.

40. Ibid

41. n. 37.

42. For a study of the concepts, see Yashwant Deva, "Signal Intelligence Concepts, Trends and Issues," *Strategic Analysis*, July 1991.

43. R Garigue, "Information Warfare; Developing a Conceptual Framework," Discussion Paper, Draft Ver 2.0, *www.cse.dnd.ca/~formis/overview/iw*

44. Ibid.

45. Ibid. Knowbots are programmes designed by their users to travel through networks inspecting and understanding similar kinds of information, regardless of the language or form in which it is expressed. They produce knowledge by linking information.

46. Ibid.

47. Alexander Chislenko, n. 7.

48. Ibid.

49. Ibid.

50. Ibid.

51. See Peter Grier, "Information Warfare," *Airforce Magazine,* March 1995, p. 35.

52. Alexander Chislenko, n. 7.

53. Ibid. Chislenko further argues that "when interfaces become so smooth and sophisticated, the human-based intelligence will hardly be able to tell where the system core ends and the interface begins."

Information Superhighways and Repercussions on Command Style

LT COL A BANERJEE

Introduction

The so called information highway is the topic of endless newspaper and magazine articles, television and radio broadcasts, conferences and rampant speculation. There has been an unbelievable amount of interest in this subject during the last few years, both inside and outside the computer industry. We are watching something historic happen, and it will affect us all in a big way, rocking us the same way the discovery of the scientific method, the invention of printing, and the arrival of the Industrial Age did.

However, there is a lot of misunderstanding about the technology and its possible pitfalls. Some people think that the highway - also called the network - is simply today's Internet or the delivery of 500 simultaneous channels of television. Others hope or fear that it will create computers as smart as human beings. Those developments will come, but they are not the highway.

The scope of this paper embraces two issues. Firstly, it attempts to define what is the information superhighway with its predicted possibilities, and secondly, it speculates on the likely repercussions on the command style and hierarchy in the Armed Forces once the information highway becomes operational in our day-to-day functioning.

The Beginning of the Information Age

The revolution in communications is just beginning. It will take place over several decades, and will be driven by new applications, new tools, often meeting currently unforeseen needs. During

Edited text of the essay which won the First Prize in Group II of the COAS Gold Medal Competition 1996-97.

Lt Col A Banerjee is serving at AMC Centre and School, Lucknow.

Journal of the United Service Institution of India, Vol CXXVIII, No. 534, October-December, 1998.

the next few years major decisions will have to be made by the Government, organisations and the individuals. These decisions will have an impact on the way the highway will roll out and how much benefit those deciding will realise. It is crucial that a broad set of people not just technocrats participate in the debate as to how this technology should be shaped. Everyone will be touched by the information highway.

Now that computing is relatively inexpensive and computers inhabit every part of our working environment, these will join together to communicate with us and for us. Interconnected, they will form a network called the information highway. A precursor is the present day Internet, which is a group of computers exchanging information using current technology. We will communicate with it in a variety of ways, including some that will resemble TV sets, some like Personal Computers, some will look like telephones and some will be devices of the size of a pocket wallet. And at the heart of each will be a powerful computer, invisibly connected to a number of other computers.

Changes of this magnitude make people nervous. Everyday, all over the world, people are asking about the implications of the network, often with apprehension. The information revolution is just beginning. The cost of communications will drop as precipitously as the cost of computing already has. When it gets low enough and is combined with other advances in technology, information highway will no longer be just a phrase for eager executives and excited politicians. It will be as real and as far reaching as electricity.

There will be a lot of information. One of the worries most often expressed about the highway concern the information overload. Information overload is not unique to the highway. We already cope with an astonishing amount of information by being selective. On the information highway, technology and editorial services will combine to offer a number of ways to help us find information.

The ideal navigational system should expose seemingly limitless information, and yet remain easy to use. Perhaps the

most intriguing approach, and one that promises to be the easiest of all to use, will be to enlist the aid of a personal agent who will represent one on the highway. The agent will actually be a software, but it will have a personality suited to one's needs and profession.

Spatial navigation, which is being used in some software products, will let one go where the information is by enabling interaction with a visual model. Spatial navigation will be particularly important for interacting with television and portable Personal Computers which are unlikely to have conventional keyboards. To visit a unit, the Commander sitting in his office at the formation headquarters might open up the map of the station on his computer screen, then point, using a mouse or a remote control, at the tactical number of the unit, and see the functioning of the unit on his computer screen through a video camera connected to the information highway. He may be able to navigate down the unit lines. He will be able to zoom in and out and pan around to different locations easily. Will it be like 'Big Brother' watching? Only time will tell.

Paths to the Highway

Before we can enjoy the benefits of the information highway, it has to exist. It does not exist as yet. This may surprise people who hear everything from a long distance telephone network to the Internet being described as the 'information highway'. The truth is that the full highway is unlikely to appear for at least a decade. Personal Computers, multimedia, Compact Disc Read only Memories (CD ROMs), high capacity cable TV networks, wired and wireless telephone networks, and the Internet are all important precursors of the information highway. Each is suggestive of the future. But none represents the actual information highway.

Constructing the highway will be a big job. It will require the installation not only of physical infrastructure such as fibre-optic cables and high speed switches and servers, but also the development of software platforms. Applications will also have to be built on a platform.

The software that will run the highway will have to offer navi-

gation and security, electronic mail and bulletin board capabilities, connections to competing software components and billing and accounting services. The growth of the Internet over the past few years suggest that highway applications will become popular and justify large investments.

Already, anyone can send a message on the Internet - for business, education, or even for courtship. The information highway will add video, which will do away with the social, racial, gender and species blindness that text only messages permit. On the other hand, nuances of communications such as facial expressions, body language and so on, will get added.

The Internet and other information services carried on telephone network suggest some aspects of how the information highway will operate. When A sends B a message, it is transmitted by phone line from A's computer to the server that has A's 'mailbox', and from there it passes directly or indirectly to whichever server stores B's 'mailbox'. When B connects to his server via the telephone network or a computer network, B is able to retrieve the contents of his mailbox, including A's message. That is how electronic mail works. One can type a message and send it to one person or to twenty-five, or post it on what is called the bulletin board. An electronic bulletin board is where messages are left for anyone to read. Public conversations result as people respond to messages.

In addition, Internet supports 'Web Browsing', one of its popular applications. The 'World Wide Web' (WEB or WWW) refers to those servers connected to the Internet that offer graphical pages of information. When one connects to one of these servers, a screen of information with a number of hyperlinks appears. When one activates a hyperlink by clicking it with the mouse, one is taken to another page containing additional information and other hyperlinks. The protocols that define 'Web Browsing' are simple and have allowed servers to handle large volumes of traffic reasonably well.

Even if the Internet is not actually the information highway,

one can think of it as the beginning of the highway. The trail blazed by the Internet will direct many elements of the highway. The current Internet lacks security and a billing system.

The wireless networks that will allow us to communicate when we are mobile will grow out of today's cellular-telephone system and the new alternative wireless phone service called PCS. There will also be local wireless networks inside workplaces. These networks will allow us to connect to the highway.

Security Considerations

The problem of security of the data or information has received publicity since it became apparent that computers can play an important role in processing and storing secret, private or proprietary information. Whereas a single item of information may, on its own, be almost irrelevant, the aggregate of several small items of information may present something useful in terms of potential value to an enemy, whether that enemy is a business competitor, a military opponent or somebody with straightforward criminal intent. Wireless services also pose obvious concerns about privacy and security, because radio signals can easily be intercepted. Even wired networks can be tapped. The highway software will have to encrypt transmission to prevent eavesdropping.

Governments have been keeping information with themselves, for both economic and military reasons. The need to make personal, commercial, military or diplomatic messages secure or to break into them, has attracted intellects through the generations. It is very satisfying to break an encoded message. Charles Babbage, who made dramatic advances in the art of code-breaking in the mid Nineteenth Century wrote: "deciphering is, in my opinion, one of the most fascinating of arts, and I think I have wasted upon it more time than it deserves."

Past wars have been won or lost because the most powerful governments on earth did not have the cryptological power, any interested junior high school student with a personal computer can harness today. Soon any child old enough to use a computer will be able to transmit encoded messages that no government on

earth will find easy to decipher. This is one of the profound implications of the spread of fantastic computing power.

When one sends a message across the information highway, it will be 'signed' by one's computer or other information appliance with a digital signature that only the sender can apply, and will be encrypted, so that only the intended recipient will be able to decipher. The mathematical principles on which this is based are called 'one-way functions' and 'public-key encryption'. A one-way function is something that is easier to do rather than undo. For example, breaking a pane of glass is a one-way function. The sort of one - way function required for encoding is one that is easy to undo if you have an extra piece of information, and very difficult to undo without that extra piece of information. There are a number of such one-way functions in mathematics. One involves prime numbers without any known pattern except that they are prime. When two prime numbers are multiplied, one gets a number that can be divided evenly only by those two primes. Finding the primes is called factoring the number. For example, it is easy to multiply the prime numbers 11,927 and 20,903 and get the number 249,310,081, but it is almost impossible to recover from the product, the two prime numbers that are its factors. This one-way function, the difficulty of factoring numbers, underlies an ingenious kind of cipher; the encryption in use today. It takes a long time for even the world's largest computers to factor a really large product back into its constituent primes. A coding system based on factoring uses two different decoding keys, one to encipher a message and a different but related one to decipher. With only the enciphering key, it is easy to encode a message, but deciphering it within any practical period of time is nearly impossible. Deciphering requires a separate key, available only to the individual who is receiving the message or rather his computer.

The enciphering key is based on the product of two huge prime numbers, whereas the deciphering key is based on the primes themselves. A computer can generate a new pair of unique keys in a flash, because it is easy for a computer to generate two large prime numbers and multiply them. The enciphering key thus created can be made public without risk, because of the difficulty in obtaining the deciphering key.

The practical application of this encryption will be at the centre of the information highway's security system. The world will become reliant on this network, so it is important that security be handled competently particularly in the military context. One can think of the information highway as a postal network where everyone has a mailbox that is impervious to tampering and has an unbreakable lock. Each mailbox has a slot that lets anyone slide information in, but only the owner of the mailbox has the key to get the information out. Each user's computer or other information appliance will use prime numbers to generate an enciphering key, which will be listed publicly, and a corresponding deciphering key which only the user will know.

Security can be increased further by having time stamps incorporated into encoded messages. If anyone tries to tinker with the time a document was drafted or sent, the tinkering will be detectable. This will rehabilitate the evidentiary value of photographs and videos, which has been under assault because digital retouching had become so easy.

Changing the Concept of Documents and Filing Systems

For more than 500 years, the bulk of human knowledge has been stored as paper documents. Paper will be with us indefinitely, but its importance as a means of finding, preserving, and distributing information is diminishing.

When we think of document we probably visualise pieces of paper with something printed on them, but that is a narrow definition. A newspaper article is a document, but the broadest definition also includes a TV show, a song, or an interactive video game. Because all information can be stored in digital form, documents will be easy to find, store, and send on the highway. Paper is harder to transmit and very limiting if the contents are more than text with drawings and images. In future, digitally stored documents will include pictures, audios, programming instructions for interactivity and animation, or a combination of these and other elements.

On the information highway, rich electronic documents will be able to do things now pieces of paper can. The highway's powerful database technology will allow them to be indexed and retrieved using interactive exploration. It will be extremely cheap and easy to distribute them. In short, these new digital documents will replace many printed papers. In times to come, we will be able to save hundreds of thousands of pieces of paper and many person years of drafting and copying. The digital document, complete with authenticated digital signatures, will be the original, and paper printouts will be the duplicate or secondary.

As documents become more flexible, richer in multimedia content, and less tethered to paper, the ways in which people collaborate and communicate will become richer and less tied to location. Almost every sphere of activity - work, education and leisure will be affected. The information highway will revolutionalize communications. Organisations, including the Armed Forces, will become more effective and smaller. Leaders at all levels are going to be dazzled by the capabilities information technology has to offer. But they should remember that a computer is just a tool to help in solving identified problems. It is not, as some people seem to expect, a magical panacea. Automation applied to an efficient organisation will magnify the efficiency. On the other hand, automation applied to an inefficient operation will magnify the inefficiency.

Impact on Meetings and Conferences

Conventionally, leaders share information internally by exchanging notes and discussions expending time and money to reach good decisions. The potential for inefficiency is enormous. Electronic mail and shared screens is a viable option. When face-to-face meetings do take place, they will be more efficient because participants would have exchanged background information by e-mail. When the information highway is available, people would not be limited to audio and still images, because the highway will also transmit high quality video. Geographically, distant collaborators will be benefited. The cost of videoconferencing as that of technology and communications would reduce.

Effects on Command and Control

When subordinates and commanders are physically apart, command and control will have to adapt, and each individual must learn to contribute as a useful member of the organisation. New feedback mechanisms will have to evolve too, to analyse the outcome. Information technology will require re-examination of the very nature of Army Organisations - its structure, and the balance between full time soldiers and staff and outside consultancy and firms. E-mail can help in flattening the hierarchies and reducing the chain of command. Staff officers at formations who pass the information up and down the chain, will not be as important in the future as they are today. Most armies of the world will eventually be smaller.

Since central direction and control of a fighting force is essential to successful conduct of a modern war, the focal point of command must be prepared to cope with large quantities of information flowing in and out. Once a chain of command has been established and the corresponding hierarchy of communication networks brought into being, the information transfer through the electronic networks begin to take place and the functional subnetworks of intelligence, operations, logistics, plans and communication centres are developed. The very nature of war is dynamic and, therefore, our army must also develop systems that can support such dynamism by having inbuilt flexibility and allow rapid changes of plans. For this, lateral and vertical flow of information needs to be supported.

The necessity for speedy collection, collation and processing of information is important at all levels. In the present system, staff officers obtain information from various sources, which is processed and utilised by a commander for decision making. This procedure is time consuming and prone to errors. Due to rapid changes in tactical situation and speedy access, processing of a vast amount of data relating to battle has become imperative at every level. To accelerate the decision making process, access to information in real time or near real time, is required. The enhancement of speed in decision making will enable the commander to gain a significant combat edge over opposing forces.

Communication systems alone will not ensure effective information flow. For example in a phased operation, a commander has to be certain when his orders were passed and how far implementation has progressed. Earlier the facility and pace of communications just matched the associated staff procedures. It is so simple now to communicate, that casualness may set in resulting in failure to transmit a key message, let alone get it acknowledged and logged. Vastness of the flow of information make sorting and processing a problem, and an important message may get lost in the clutter. The uncertainty cast on even the best of communications by electronic warfare further amplifies the importance of this fact. Information flow can be interrupted by communication problems, excessive secrecy, and compartment-ation or even a simple failure to realise the importance of a particular message for immediate decision making. Accurate assessment and effective use of information can also be degraded by cognitive limits on analysis and decision making.

When information loading occurs, load shedding also occurs, producing inaction or delayed reaction due to system overload, misrouting of messages and deliberate interference by the enemy. Communication problems can also severe links with lower formations under command. Problems, therefore, can take many forms including loss of contact, garbled messages and delays in message delivery.

Command and Control Problems

In a directive style of command, a commander actively communicates to his subordinates his concept of executing a mission and assigns tasks. There should not be any ambiguity in comprehending instructions and allotment of tasks. Therefore, two-way communication has to be perfect. Once execution commences, the necessity of mid-course corrections must be accepted. Since the very nature of modern operations is dynamic, our army must also develop a system that has inbuilt flexibility and allow rapid changes of plans. This however, is not so. Command today, thanks to the information revolution, is the collective effort of all commanders in the various echelons of hierarchy and not so much personalised art as hitherto believed.

Our procedures and methods should allow us to disperse our forces and reduce our vulnerability. The end objective is to prevail in battle, maximising the enemy's losses and minimising our own. All this is possible by proper utilisation of information. The amount of knowledge or information a combatant possesses and its proper utilisation, directly affects his combat effectiveness.

Future capabilities will give the commander greater flexibility in adapting to a situation in innovative and creative ways. The commander will be faced with an extremely complex environment and a bewildering array of options and decisions to be made. Because of the greatly increased tempo of operations, he will have little time to evaluate a situation to select and effect a course of action. Future battles would be on the lines of one-day cricket and rapid chess.

Organisational Changes

As the overall force is optimised, so must every other advantage be maximised. Therefore, controlling information, the tempo of battle and the battle space itself are crucial. If information is a force multiplier, we could begin rethinking of the overall structure of corps, divisions, brigades, units and smaller groups. One outcome could be that traditional organisational structure would change. Units will have lesser manpower and equipment and formations also may have fewer staff officers and our staff procedures could also undergo rapid changes.

The concept of modern command and control systems can only be implemented with the availability of sophisticated communication networks. Such a situation requires organisation and integration of various information inputs, collection, dissemination, management and control, processing techniques and ability to make sound decisions under tight time constraints. This would require a modified framework from which to manage, co-ordinate and disseminate different information manipulation functions. Though responsibilities in our army will follow the time honoured system of remaining hierarchical (at least in the near future), the efficacy of hierarchical organisations will diminish once information sharing

networks become the norm. There is requirement to develop information sharing networks that would gather precise and exhaustive data, process by computer and operate within the battle zone. Staff for such tasks would not just contribute their single specialised function but would need to become contributors, collaborators, communicators and members of the team. Procedures will also need to be changed and would be organised around information and not functions. The span of control will grow larger, organisations would need to be made flatter and task oriented groups would be more prominent.

International Relations

Changing world scenario due to the information highway will affect perceptions of all citizens including armymen, thus affecting to some degree the traditional means of motivation on patriotic and similar themes. The presence of advanced communication systems promises to make nations more alike and reduce the importance of national boundaries.

Non-commercial satellite broadcasts to nations such as China and Iran offer citizens glimpses of the outer world that are not necessarily sanctioned by their governments, thereby increasing their understanding of other cultures. Within undivided societies, people would pay greater attention to global issues or cultures and less to traditional ones. The information highway is going to break down boundaries and may promote a world culture, or at least a sharing of cultural activities and values. This would help to increase the understanding, citizens of one country have about their neighbouring countries and therefore, reduce international tensions. That, itself, could be sufficient to prevent future conflicts.

Conclusion

The revolution in communications which would come with the linking of the Armed Forces to the information superhighways in times to come will affect both the anatomy i.e., structure and physiology or functioning of the Armed Forces. There will be need to re-evaluate the staff procedures and organisations. Information

availability will dictate changes in order to maintain our competence. In war, uncertainty or ambiguity will always remain. There is need, therefore, to constantly innovate, learn, and adapt as we go along, both in our structure and in our command style and functioning.

We can learn lessons from the upheavals taking place in civilian organisations both in the public and private sectors. The organisational structure of the Armed Forces in the past had delivered the goods to such an extent that most large enterprises in the civil sector emulated its model. This structure was based on command and control, with a well defined hierarchy and a vertically placed top-down decision making process.

This model of organisational structure is authoritarian in nature and a good worker is one who is obedient, fast and efficient - like a well-oiled machine. This structure served organisations well upto the time the environment was relatively stable and less uncertain.

From the 1960's things started changing. The introduction of computers led to the automation of many transactions. Routine and repetitive tasks were transferred into non-human silicon hands, considerably reducing the number of employees at the base level.

Technological advancements gradually highlighting the increasing importance of information technology has resulted in the emergence of a flat management structure, which has replaced the top-down control system. All command and control hierarchies are being replaced by a more flexible network form of organisation. The new technology has made it possible to render so many layers of management redundant, in particular the middle managers.

In times to come, the armed forces are likely to experience similar organisational and functional changes as they are increasingly influenced by the information highway. However, as with all major changes the benefits of the information highway will carry costs. There will be dislocations in the organisation that will create a need for re-training. The availability of virtually free communica-

tions and computing will alter the relationships of nations and of socioeconomic groups within nations. The power and versatility of digital technology will raise new concerns about individual privacy, confidentiality and national security. A major vulnerability of the information highway will be the system's reliance on cryptography - the mathematical locks that keep information safe.

None of the protection systems that exist today, whether steering wheel locks or steel vaults, are completely fail safe. A breakthrough in mathematics or computer science that could decipher the mathematical code will be a disaster as we come to rely almost exclusively on the network. The obvious mathematical breakthrough would be the development of an easy way to factor large numbers. Any organisation possessing this power could penetrate any military file and undermine security.

To conclude, a range of important issues confront us. We do not necessarily have all the answers today, but, now is the time for a broad discussion. Technological progress will force all of us to confront tough new problems, only some of which we can foresee. The pace of technological changes is so fast that sometimes it seems the world will be completely different from one day to the next. It won't. But we should be prepared for change.

References

1. *Military Review*, June 1992.
2. *Jane's Defence Weekly,* April 1994.
3. *Military Review*, April 1994.
4. *Combat Journal,* (College of Combat, Mhow), April 1996.
5. Bill Gates, *The Road Ahead* (Viking, 1995).
6. R S Wurmann, *Information Anxiety* (London : Pan Books, 1991).
7. Sauer, *Why Information Systems Fail?,* (Oxfordshire : Alfred Waller Ltd., 1993).
8. *Military Data Processing and Microcomputers* (London : Brassey's Publishers, 1982).

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

PART I

LT GEN E A VAS, PVSM (RETD)

Strategy, like any other discipline, has a rational foundation upon which logical doctrines and theories are discussed, conceived and implemented. During the peak of our Agricultural Civilization, India had a well-established strategic tradition which dealt with threats on five fronts: diplomatic, economic, social, psychological and military. With the advent of Industrial Civilization and during colonial rule, Great Britain took over the military security of South Asia. Indian leaders lost touch with the military aspects of strategy. After World War I, our leaders began to demand freedom from colonial rule. Because they lacked military power, our leaders were forced to confine themselves to the non-military aspects of strategy. Thus, the Freedom Movement adopted a non-violent satyagraha approach. This was a skillful strategy and it was able to survive and confront British military power because of Mahatma Gandhi's moral leadership, and because our opponents were not ruthless barbarians; such a strategy would never have worked against a Stalin or Hitler.

Nehruvian Legacy

The pre-1947 political scene was dominated by lawyers. They were well-informed about the social, economic and cultural problems of the nation, but the majority were less familiar with politico-military issues. Motilal Nehru and Subhas Chandra Bose were exceptions.

Part-I of the text of Colonel Pyara Lal Memorial Lecture - 1998 delivered by Lt Gen E A Vas, PVSM (Retd) at the USI, New Delhi on 21 September 1998.

Lt Gen EA Vas, PVSM retired as Army Commander. He is the author of a number of books on subjects such as Terrorism, Insurgency, History and Geography.

Journal of the United Service Institution of India, Vol CXXVIII, No. 534, October-December, 1998.

Jawaharlal Nehru, unlike his father, took little interest in the Indianisation of the armed forces, recruitment policies and concepts of politico-military control.

Nehru hoped to create a world where nations, instead of forming groups to act against each other, would learn to eschew conflict and settle their disputes in a peaceful manner. He felt that India, with its philosophy and idealistic past, could provide a lead in this direction. He placed his faith in the UN. Overlying his idealism was his hatred of war and of all things military. Thus, his intellectural make-up lacked an important dimension; he gave no deep thought to politico-military matters. This prevented him from making sound security decisions.

Apart from Nehru, millions of our people dislike violence and hesitate to kill a mad dog, what to speak of a ruthless terrorist. Millions subscribe to a romantic belief that satyagraha and nonviolent action are a better and more noble substitute for military action. These detractors of force argue that if Gandhian tactics could confront and defeat powerful imperial Britain, then non-violent non-cooperation can surely deal with internal violence and external aggression. Thus, for different reasons, millions accept the armed forces as an unfortunate expense; a colonial residue which ought to have no place or role in a civilised democracy; an evil which will somehow disappear with time. Till that happens, the armed forces must be tolerated; their role is to defend the borders, support the government in dealing with internal unrest, remain disciplined and obey the orders of their elected leaders without question.

Nehru's disinterest in military affairs was to have serious implications because he, as Prime Minister, played a key role in shaping India's military high command and strategic management. His views reinforced the detractors of military power and shaped the thoughts and prejudices of four decades of politicians, intellectuals and civil servants who, taking their cue from him, failed to acquire an interest or adequate understanding of the legitimate role of military force in democratic governance.

The basic issues of national security planning, both internal

and external, are a challenge to any society, whether democratic or totalitarian. Security plans have to be evolved on five fronts (human activities) : diplomatic, economic, social, psychological and military. This requires a willingness to accept that military professionals have a legitimate role in the formulation of national policies which have a security content. In a democracy, it is axiomatic that the military remains apolitical; that the military must always be subordinate to elected political leaders. It is also axiomatic that military force cannot resolve political issues. The corollary to this is that political action which is not backed by force cannot be effective. Nehruvian misconceptions and the views of well-meaning detractors prevents a clear understanding of these basic issues. The confusion is further compounded by a false cloak of secrecy with which security issues are shrouded. This prevents serious public discussion of vital matters which should be publicly debated. Thus, fundamental concepts and axioms of democratic governance with regard to politico-military decision-making are systematically ignored.

The Decision-making Structure

After independence, the Government inherited an antiquated politico-military defence structure fashioned during the Kitchener-Curzon era; a system in which the army chief and the civil secretary operated in separate watertight compartments. The army chief was supreme; the naval and air force chiefs were very junior officers and his subordinates. Obviously changes had to be introduced to provide for the supremacy of the elected government and for the proper coordination and functioning of the three Service Headquarters and the defence ministry. Nehru left these important decisions to Lord Mountbatten. At that time, because of partition, each of the three Services was being split into two and the residual army was deeply involved in the maintenance of law and order on the eastern and western borders. In view of the unstable internal situation prevailing, Mountbatten could not suggest many desirable changes. Thus, he did not recommend the integration of the defence ministry and the three Service Headquarters - an essential managerial step. Such a structure had been functioning in Britain since 1920. That step would have necessitated the creation of

three separate councils, each headed by an elected politician who presides over the council consisting of the chief of the Service concerned, his principal staff officers and a civil servant.

In this system, the army, naval and air force councils would function very much on the lines of the Railway Board. In this situation, Service chiefs are redesignated as the Chief of the Staff (council). Until it was timely to restructure the defence ministry and create such integrated councils, Mountbatten initially recommended that minimum interim reforms to the existing organisation be undertaken, and that the Service Chiefs continue to function as Commanders in Chief (C-in-C), separated from the Defence Ministry. Further reorganisation would have to await a more stable period. Mountbatten's interim recommendations gave clear recognition to the axioms that the armed forces in a democracy have a legitimate role in policy planning which involves a security content; that the military has a duty to advise the elected government when its opinion is asked for; that political masters have the power and the privilege to reject the military's advice; that the final authority is always the elected leader.

Mountbatten recommended the setting up of a series of committees to effect coordination between politicians, the military and the administration within the three Services. At the highest level was the Defence Committee of the Cabinet, presided over by the Prime Minister with selected ministers including the defence minister as members; the service chiefs, defence secretary and financial adviser were to be in attendance at all meetings. Working under this apex body was the Defence Minister's Committee presided over by the Defence Minister, with the three service chiefs, the defence secretary and the financial adviser as members. Apart from this were other committees with members composed exclusively of military officers. The secretariat for the top level committees was to be provided by the Military Wing to be set up in the Cabinet Secretariat. The Defence Committee of the Cabinet and the Defence Minister's Committee were the only bodies where the service chiefs could discuss security issues with their elected masters formally.

Mountbatten's proposals were approved by the Cabinet. It is doubtful if Nehru appreciated that these were interim proposals pending other essential changes; he was uninterested in military details. Moreover, other important domestic and international issues demanded his attention at that time. It must also be admitted that service officers in 1947 were equally ignorant and totally inexperienced in the functioning of a military-political nexus at the highest level. Because of the urgent tasks of consolidating India's frontiers and operations in Jammu and Kashmir, Hyderabad state, Junagadh and the north-eastern region, it suited both the politician and the military that they each be left alone at that time to work in separate compartments. Thus, an antiquated colonial bureaucratic screen continued to operate between the politician and the armed forces.

For the first decade, the two top Defence Committees kept meeting as and when required. No controversial issues arose. The armed forces cheerfully involved themselves in the territorial consolidation of India; a task which the young officers performed with courage and enthusiasm. The task of the senior military officers was to stabilise the truncated services, maintain discipline and provide sound administration. This the Sandhurst trained officers did with distinction. When Pakistani raiders were threatening Srinagar, our army and air forces, led by dashing officers, fought their first war as free men to defend Jammu and Kashmir against a planned aggression. The elan, courage and initiative displayed by our swift airborne response stunned the British advisers who had assured Pakistan that it would face no serious military opposition as there was no land route between India and Jammu and Kashmir. While these exciting events were taking place, the bureaucratic screen expanded into a Parkinsonian barrier manned by hundreds of civil servants and clerks whose sole task was to vet military proposals; they enjoyed power without accountability or responsibility.

During this period, the status which the service officer had enjoyed vis-a-vis his civilian counterparts was eroded. The vast majority of the service officers saw the logic of this change in precedence to come into line with the realities of democratic change.

Over the years, as the Sandhurst trained officers retired, IMA-trained ones began moving into positions of authority. By now they had become experienced professionals who realised that the decision-making system was out of date; they resented the bureaucratic screen; the frustration of avoidable red-tape, and the endless files and notings by civil servants who did not know what they were writing about. Military officers began presenting well-reasoned papers on the need for reform; the need to merge the Defence Ministry and Service Headquarters and adopt the Chief of Staff council system. At that time, the naval and air force chiefs were not keen supporters of such proposals. Civil servants enjoyed such divisions between the three Services. However, some members of parliament took up the Army's proposal. Nehru sensed the pressure for change. In March 1955, he announced in Parliament the change in the designation of the three service chiefs from Commander-in-Chief to Chief of Staff. This was nothing more than a verbal smoke-screen. It is a misnomer to call our service heads chiefs of their respective staffs without carrying out reforms and forming integrated service-councils. However, this ploy confused the issue and silenced the critics. While announcing this change in designation of the service chiefs, Nehru also stated that as in other democratic countries, India too would be having a defence council: this statement was loudly cheered by the House. Few understood what was being announced.

The Krishna Menon Period

At this time, Krishna Menon was appointed the Defence Minister. Menon was a megalomaniac with a quarrelsome and irritable nature. His ideology, like Nehru's, had been formed in England in the early 1930s when Communism and its supposed embodiment, the Soviet Union, was accepted in certain intellectual circles as the wave of the future. Menon had two pet obsessions: a dislike for capitalist America and a belief that China would never attack India. He had a Rasputin-like effect on our affairs in general and over Nehru in particular. He seemed to enjoy deliberately insulting those who worked with him.

When Menon was moved from London after the Jeep scandal

and was appointed as Defence Minister, General Thimayya took over as the COAS. Their relations were cordial to begin with. The Chinese were then consolidating their hold over Tibet. This period saw the rise of Lt Gen B M Kaul, a man with a brisk military style who owed his advancement to his capacity for political accommodation rather than military knowledge or experience, of which he had almost none.

By the early 1960s it was evident that India and China had both opted for a forward policy along the disputed northern border. Where Chinese border posts were backed by administrative bases on the Tibetan plateau and supported by road transport, Indian posts were isolated detachments widely separated and in some cases ten days marching time away from the nearest road head. The tactical danger of this posture was pointed out by concerned field commanders.

Nehru's forward policy was strategically pragmatic. The Chinese could not be given a free run to do what they pleased on the northern border; it was necessary that India fill the gaps and display our presence wherever possible. At every session of the Defence Minister's meeting the COAS accepted the forward posture but urged that our outposts be backed by minimum defences well in depth; this was sound military advice. The COAS was assured that the Chinese would not attack India. Civil servants and intelligence officers at the meeting agreed with the Defence Minister. There was no rapport between the military and the politician; the COAS was overruled and told, "This is a political decision; don't interfere. Obey orders." So, vital tactical decisions were made by civil servants and politicians who were ignorant of the realities of military power. The COAS's dissent was recorded in the minutes of the meeting.

Tied up with our traditional neglect and ignorance of the military is a fear of the military. This was understandable in the early years of independence because after World War II, the military frequently played a key role in revolutionary situations in newly liberated African and Asian colonies. In a democracy, the armed forces are expected to remain apolitical. After Partition, this tradition was

shattered in South Asia in Pakistan in 1951 when a few leftist politicians, supported by military officers, plotted to assassinate the Prime Minister and the C-in-C, a British officer.

All political systems, democratic or otherwise, have to face the dual problem of developing and controlling military power. In India's formative years, a military coup was very feasible; this would then have meant a simple matter of taking over six centres of power: North and South Blocks, All India Radio and four international airports. It was therefore prudent for the government to keep a close watch on the armed forces.

Thimayya was a charismatic and very popular loader; qualities which Menon lacked. He feared that Nehru would be swayed by the General and that this would undermine his position as Defence Minister. He concocted a story that the COAS was planning a military coup against Nehru. If there was any officer wholly disinterested in politics, it was Thimayya. Menon's action is explicable only on the theory that he did not want anybody other than himself to have the ear of the Prime Minister on defence matters. Menon did not succeed in getting Thimayya dismissed, but he destroyed the confidence of the Prime Minister in the COAS and the military and in the course of time undermined the morale and solidarity of the armed forces.

These events coincided with Kaul's promotion and was a time that tested the character of the officer corps. Thimayya's resignation as COAS created a national furore. Rumours circulated that he had resigned in protest over the government's forward policy. But it is now clear that he resigned because the Defence Ministry kept overriding Army Headquarters on certain key appointments. Nehru sent for Thimayya and persuaded him to withdraw his resignation which he did. The next day, whilst answering questions on this issue in Parliament, the Prime Minister referred to Thimayya's resignation and subsequent withdrawal as "childish gestures" of no consequence. Thimayya appeared to lose all influence thereafter and Kaul took over the key assignment of Chief of the General Staff: a vital operational staff appointment. Field commanders who were not prepared to accept Kaul's forward

policy instructions were sidelined and willing sycophants were found to replace them.

The few times that the Defence Minister's Committee met in Delhi, Thimayya continued to point out the dangers facing our forward posts and our precarious tactical posture. Menon would ignore these warnings and assure the Committee that "the Chinese are playing a cartographic game and there would be no hostilities." The minutes of those meetings are on record. Thimayya retired in early 1961. General P N Thapper was appointed the COAS.

The Sino-Indian Conflict (1962)

In September 1962, Kaul was appointed to command the corps responsible for the defence of NEFA. When our troops began moving forward onto Tagla ridge in Tawang district of NEFA, the Chinese retaliated with force, overrunning a scattered brigade position and occupying the whole of Tawang. They simultaneously attacked forward positions elsewhere in NEFA and Ladhak. After a fortnight's pause, they continued their assault and overran the whole of NEFA upto the Assam border. The Army's defeat was total; if they wanted to, the Chinese could then have walked into Assam without any opposition. In December 1962, China unilaterally withdrew from NEFA back across the McMahon Line.

Nehru, shocked by China's success, admitted in Parliament that he had lived "in an artificial world of our own creation." He accepted that the debacle was due to his ignorance of military affairs. To offset his political opponents, he proclaimed the formation of a National Defence Council composed of all the chief ministers, some retired service officers and others. This was intended to pacify public opinion; such a body is incapable of exercising effective strategic control and it subsequently died a natural death.

Menon, the COAS and Kaul resigned after the debacle. Significantly, not a single IAS officer resigned. After all why should they? They had no responsibility and are never accountable. General J N Chaudhri took over as the COAS, and Y B Chavan as the Defence Minister. The latter started holding regular morning

meetings with the Defence Secretary and the three Service Chiefs; no agenda was issued nor were any formal papers asked for or discussed. These meetings were useful in their own way but are no substitute for formal meetings of the Defence Committee of the Cabinet and the Defence Minister's Committee, both of which were no longer held after the Chinese attack. It seemed as if the politicians were afraid of a formal agenda, dissent and recorded minutes; all these could later become evidence for some future historian.

An enquiry under General Henderson-Brooks was undertaken by the Army to investigate the causes for the debacle. This report has still not been made public. But it requires no great imagination to list some of the reasons for the debacle. The obvious ones are material: our army was equipped with World War I rifles, mortars and guns, the men lacked winter clothing and even boots; logistic support was lacking due to poor road communications. The less obvious reasons were conceptual. Firstly, political decisions which have a security content are worthless if they are not backed by military power. Secondly, the armed forces were functioning with an antiquated politico-military decision-making system which kept the military separated from politicians; key decisions were being influenced by civil servants who were ignorant of military realities. Thirdly, our intelligence set-up was inefficient. The government did nothing about reforming the decision-making system. On the contrary, it went a step backwards and stopped meetings of the Defence Committee of the Cabinet, and the Defence Minister's Committee; these were the only institutions which give the Service Chiefs an opportunity to meet their political masters face to face, discuss security issues and record their opinions. However, the intelligence set-up was divided into two parts: foreign (Research and Analysis Wing) and internal (Intelligence Bureau). Both these parts were headed by police officers.

(To be concluded)

Integrating the Armed Forces

LT GEN V K SINGH, PVSM (RETD)

Introduction

The Indian Armed Forces are, among the major armed forces of the world, the least integrated. Whether it is a question of strategic or tactical doctrines, whether it is in training, equipment procurement or logistics, each service tends to go its own way.

The irony is that India was one of the first countries to realise, at the end of the Second World War, that all future military operations would have to be combined operations involving at least two if not all the three Services working conjointly to a common plan. It was this realisation that led to the setting up of the National Defence Academy where cadets for all three Services are initially trained together and also the setting up of a Defence Services Staff College instead of separate service staff colleges as was the norm in many other countries. While these institutions have certainly helped in improving inter-personal relationships, particularly the NDA, these have not translated either into an understanding of each other's operational requirements or of any true integration in thinking and working together.

This lack of integrated thinking was obvious in the 1962 and 1965 conflicts; the former was left purely to the Army to conduct and the latter saw each service fighting very much their own individual wars. The 1971 operations showed a slight improvement in joint planning, more due to the personalities involved, than to any institutionalised system.

The result of this is that there is no common agreed strategic plan to counter our potential adversaries, no common accepted doctrine for the Land-Air battle or for that matter the Sea-Air battle, leave alone any common approach to training, equipment procure-

Lt Gen V K Singh, PVSM (Retd), is former Director General of Military Operations.

Journal of the United Service Institution of India, Vol CXXVIII, No. 534, October-December, 1998.

ment, intelligence gathering or logistic support. There is much talk of exercising the nuclear option, but there does not appear to be an accepted doctrine for nuclear war fighting or the command and control and circumstances for the use of such weapons.

Necessity for Integration

Strategic Planning. This is essential to make optimum use of limited resources, and resources will always be limited. There is a necessity to have a well considered and commonly accepted strategy to deal with military threats. This requires, first of all, a common definition of the threat, the time frame in which the threat is likely to arise and the strategy required to meet the threat. This in turn would need to be amalgamated in a national strategy which would include the diplomatic, political and economic, in consonance with which the military strategy would be implemented.

Operational Planning. Once a strategy has been agreed upon it needs to be translated into a specific operational plan. This operational plan should cover the whole theatre of operations. If, for example, Pakistan is considered a potential adversary, then there must be a basic operational plan which covers the entire Western frontier from the Siachen to the Rann of Kutch and thence into the Arabian Sea. It is only when such an overall plan is made that a judicious distribution of existing resources can be worked out between the various sub-sectors of the theatre of operations and shortfall in resources can be identified.

Force Structuring : Once the three Services have a common accepted strategy and a common operational plan, one can reach an agreed viewpoint on the force structures required by the three Services and approach the Government with a common Perspective Plan and a common Defence Five Year Plan. Such a commonality of approach will immensely strengthen the case for allocation of resources and greatly reduce the scope for the bureaucrat from playing one Service against the other and thus becoming the final arbiter.

Integrated Advice. There is much talk of integrating the Service Headquarters with the Ministry of Defence as well as of setting up of a National Security Council. If the service officers posted to the Ministry of Defence are to represent only their particular service interests then all that will happen is that the turf battles will be transferred to the precincts of the Ministry with no real gain to any one. Similarly, if the National Security Council is to obtain any worthwhile military advice then it cannot be by the three Chiefs of Staff giving their individual points of view. To be fair to the National Security Council it must receive well reasoned, one-point military advice. This can only happen if the three Services are agreed on the strategy to be followed, the operational plans which flow from the strategy and the force structures required to fulfil these plans.

Economies. An integrated approach by the three services to equipment selection and procurement, their stocking and training on these can lead to considerable financial savings. To take just one example, it appears that the *Trishul* has been accepted as the common quick-reaction air defence missile system by all three Services. So far so good. But if real economies are to be achieved, then there should be common regional storage installations where the missiles for all three services are stored, regional depots where spares are stocked and a common training facility where missile pilots of all three services are trained. Not only would this lead to financial saving but training together would also greatly enhance mutual understanding and respect. The selection of the *Trishul* by the three Services may be fortuitous or forced by circumstance, but an effort to achieve commonality of equipment needs to be actively pursued. For example, the Services could look at a common family of computers capable of networking with each other or a common family of radio sets or electronic warfare equipment. The possibilities are many, provided there is a will to work it; obviously compromises will be required but as long as they do not seriously impair capabilities, they must be accepted. Similar economies can be looked at in the provision of logistics. To take again just one example, since the Navy has a major Victualling Yard at Mumbai, is there a necessity for the Army also to have a Supply Depot in Mumbai?

Personnel Policies. As the Services move to greater sophistication of equipment they will increasingly be competing with the civil sector for trained and trainable manpower. The retention of such manpower will also become increasingly difficult given the better financial and other prospects in the civil sector. Unless the Services can work out clear-cut common personnel policies they will increasingly lose out to the civil sector and find themselves trying to poach on each other for increasingly shrinking manpower of the quality required. Therefore common trades in the three Services, particularly hi-tech, must have common pay scales and promotion prospects. This can only occur when the three Services begin to address such problems in an integrated manner.

Organisation

To wait for the Government to accept the concept of a Chief of Defence Staff or an equivalent appointment, particularly given the current fluid political situation, is to wait indefinitely. The way out is for the three Chiefs of Staff to agree that whoever is the current Chairman of the Chiefs of Staff Committee will, for the period that he is in that post, be the de facto Chief of Defence Staff and will represent all three Services on matters of common interest.

The next question arises as to how this integrated view of various facets discussed earlier is to be obtained. Obviously, there is a need for a dedicated joint services staff for this task. As it is, there is the Defence Planning Staff, for this purpose, though it does not seem to function as it should. This organisation's role needs to be redefined to become a truly defence staff organisation and reorganised as necessary. This paper does not intend to set out a detailed organisation chart but to just indicate the charter of duties and thus broadly indicate the sections into which the staff could be organised.

Strategic and Operational Planning. This would include assessing the threat, deciding on the military response to the threat, suggesting other responses such as diplomatic or economic, preparing the theatre-level plans, having these approved by the Chiefs

of Staff Committee and disseminating these to the three Service Headquarters. Implementation of these plans would remain the responsibility of the operations staff at the respective Service Headquarters.

Force Structure and Financial Planning. Based on the approved strategic and operational plans, work out the required force structure and provide inputs on the financial outlay required. Prepare the Defence Perspective and Five Year Plans which would form the basis of the annual defence budget projections.

Intelligence Evaluation and Acquisition. Evaluate available intelligence and feed it to the operational planning staff, pin-point areas where further information is required and task the service intelligence agencies where it is within their competence or liaise with the other intelligence agencies such as RAW to obtain the required intelligence. Represent the Services in the Joint Intelligence Committee.

Systems Integration. Work towards structuring and installing an integrated C^4I System for all three Services.

Training. In addition to planning and running major tri-service or bi-service exercises and war games, produce common operational doctrines and actively pursue the setting up of joint training facilities for trades which are common to all the three Services.

Equipment. Work towards achieving the maximum commonality of equipment and plan their procurement and introduction to service. Prepare Joint General Staff Qualitative Requirement for any new equipment to be developed or procured so as to make it usable by all three Services.

Personnel. Set common personnel policies for recruitment, pay and allowances and privileges, particularly for trades common to all three Services. Progress this with the government.

Logistics. Look at the complete gamut of logistics support

and integrate these on a regional basis to serve all three Services within a geographical area.

Command Headquarters. There is a need at each Service Command Headquarters to have a small joint staff to deal with operational matters. This could form the embryo for the staff which may be required, once the concept of Theatre Commands which has often been discussed is accepted.

Conclusion

There is a vital necessity for the three Services to integrate their thinking and activities if they are to really influence national policy and to succeed in facing the complex challenges to the Nation's security. There are some areas where this integration and reorganisation is necessary. However organisation by itself will not succeed in achieving such integration. What is required is a change in mindset, a change which makes every serviceman feel that he is a member of the Indian Armed Forces, and not just the Indian Army, the Indian Navy, or the Indian Air Force.

NOTICE

Members interested in undertaking research projects under the aegis of the Centre for Research, may submit research proposals through respective Service Headquarters, or to the Director, for consideration by 31 Dec. each year. At present, five chairs have been instituted for one year projects, namely Field Marshal KM Cariappa Chair, Admiral RD Katari Chair, Air Marshal Subroto Mukherji Chair, Prof DS Kothari DRDO Chair and the Ministry of External Affairs Chair. Final approval of projects will be the prerogative of the Board of Management. Copies of the Rules for Award of Fellowship Grants and Conduct of Research, may be obtained from the USI.

The Soldier and the Environment

MAJOR GENERAL E D'SOUZA, PVSM (RETD)

Introduction

A few years ago when the Cold War was at its zenith, the nuclear threat was considered to be the most important danger to Planet Earth. Then came fundamentalism. Today, environmental degradation, if not stemmed, is considered to be the major threat because of the galloping consumption and the unsustainable use of natural resources like oil, coal, water, wood et al. In Africa for instance, water may well lead to a major conflict. At the Arusha Conference this fact was highlighted by the former Vice President of Sudan who cited the example of the waters of the Nile. Equally, all delegates were of the opinion that oil was the main cause for the ongoing Iraqi problem stemming from the USA's interest in that commodity.

With the end of the Cold War, many countries have had to reconsider how to use their Armed Forces essential for defence needs, now that many of them have returned to their barracks. Thanks to the initiative of this writer, the realization has dawned that there could be no better utilization of this immense reserve of trained and motivated manpower than to use it for the protection and restoration of nature and natural resources, based on the Indian initiative. This initiative received international visibility at a meeting in Divonne, France, some years ago when the then President of the World Wide Fund For Nature (WWF), Prince Philip, asked this writer to brief the gathering on how the Indian Armed Forces had taken the initiative in this unique field. Since then there has been no looking back.

It was Gandhiji who said that all Indian villages should be

Maj Gen E D'Souza, PVSM (Retd) is Indian representative of the World Association of Retired Generals and Admirals (and Air Marshals) under the acronym WCARGA. He has contributed substantially in bringing about awareness of Environmental protection.

Journal of the United Service Institution of India, Vol CXXVIII, No. 534, October-December, 1998.

like Army Cantonments with their greenery, tidiness, high standards of sanitation and hygiene and low pollution levels. After Independence, when the late Prime Minister of India Pandit Jawahar Lal Nehru displayed unusual interest in Nature, the rifle used by Service shikaris was replaced by the camera. When Smt Indira Gandhi came on the scene, the brakes were applied with visible force to protect India's rapidly degrading environment. Many senior officers became involved in this field after retirement.

Role of the Armed Forces

It would be in the scheme of things to recall the role of the Armed Forces. The traditional role of any Armed Forces is to ensure the integrity of a country's international borders from foreign aggression, and internal security including aid to the civil authority when the law enforcing agencies are unable to cope with the situation. After World War II two more dimensions were added: International Peacekeeping and Disaster Relief. The protection and restoration of the environment based on the role model of the Indian Armed Forces can be added. This recommendation has been submitted to the UN in the hope that these five roles will be incorporated in all world armies so that they become part of their training programmes.

Suitability of the Armed Forces for Environmental Protection

Armed Forces enjoy several advantages for this special task and these are listed below :-

(a) The Indian Armed Forces are a body of volunteers, all regulars, who serve for a minimum period of 15 years which ensures continuity.

(b) Personnel are recruited nationwide and are therefore aware of the problems to be confronted in various parts of the subcontinent.

(c) Recruits, especially those for the Army, the largest of the three Services, generally come from rural areas and

therefore have a better understanding of nature's web of life and the interdependency of the various parts of nature.

(d) The Military have the leadership, motivation, training and discipline to perform this role effectively.

(e) The Military have the infrastructure-mobility (even with animal transport and on foot), intercommunications, medical and engineering skills necessary for such work.

(f) The Armed Forces are looked on with respect in the country and therefore make valuable exemplars.

(g) Each year nearly 60,000 servicemen retire. This large number of trained and disciplined personnel forms a valuable pool of human resources for environmental duties such as recruitment in CEO TA Units.

(h) Deployment in ecologically rich wilderness areas in a broad spectrum of ecosystems: mountains; hot and cold deserts; riverine; tropical rain forests; coastal; marine; scrub; arid zones; the Western Ghats; and even in Antarctica.

(j) Managers of vast tracts of defence lands like depots, training areas, ranges, airfields, and other installations.

(k) Structure and organisation for easy deployment in self-contained groups at all levels.

(l) Capacity to operate in all types of terrain and weather.

(m) Deterrence to poaching and other illegal activities by their very presence.

Environmental Protection Tasks

Some of the tasks pertaining to environmental protection are as under :

(a) Prevent degradation.

(b) Green residences, living areas, cantonments, training areas and ranges.

(c) Control pollution through good hygiene and sanitation.

(d) Use and/or tap renewable sources of energy like solar, wind, geothermal and biogas.

(e) Create awareness among all ranks, their families and locals through nature camps and trails, films/TV/Audio visuals, sainik sammelans and so on.

(f) Use religious teachers.

(g) Restore areas degraded or damaged during training and like activities.

(h) Introduce efficient methods of garbage collection and disposal for recycling and/or production of biogas, organic manure, swill for unit piggeries and vermiculture.

(j) Ban the use of non biodegradable packing material like polythene bags.

(k) Liaise with local bodies and NGOs.

(l) Encouraging family planning especially among the rank and file.

(m) Acquire pertinent inputs to the cause of nature protection through observation in remote areas.

(n) Conserve power and water.

(o) Manage wastelands.

(p) Be exemplars not only in Unit areas but when personnel go on leave.

The Achievements

To assure readers and sceptics that all that has been said

is feasible, one can only quote examples at the macro, sub-macro, and micro levels, as proof.

(a) At the macro level, Southern Command has undertaken a massive tree plantation drive in many of its stations like Bhuj, Kotah and Khadki near Pune. It has conducted workshops and seminars involving like-minded NGOs in Kotah, Pune and Bhuj. It has exploited the use of solar cookers especially among Other Ranks families with success where the equipment is sold from Unit Canteens at subsidised rates. Central Command has conducted workshops in Lucknow, the Keoldeo-Ghana Bird Sanctuary at Bharatpur, Shivpuri Nature Reserve, and has undertaken tree planting and protection on a large scale in hilly areas and the Project Tiger Sanctuary in Sariska.

(b) At the divisional level, perhaps the best example is the Kotah Division when under the command of Major General Baljit Singh. In addition to providing tree cover to the barren 800 hectares of training area, this division has constructed four nature trails within the cantonment and conducted nature camps not only for all ranks but local schools as well at Ranthambore, Tal Chappar etc. The division was able to meet its requirements for distilled water to top up vehicle batteries using solar heaters. Innovative uses were tried out using solar cookers to cook food when moving in vehicle convoys.

(c) The Mechanised Infantry Regimental Centre (MIRC), Ahmednagar, was allotted 850 hectares of waste land for restoration. Within easy reach of this area are seven villages. The project was entrusted to a Lieutenant Colonel interested in this field. The Ministry of Environment and Forests sanctioned a grant for this project. By methodical planning, interacting with established NGOs and ensuring the involvement of the seven villages, this barren area has been gradually restored, so much so that black buck which were common in this area and had disappeared have now returned. A slay lick and a pool for drinking water have been

thoughtfully provided by the planners. But what is more exciting is the return of five Great Indian Bustard causing the Forest Department to place a Forest Ranger to monitor this highly endangered species. As the predator-prey relationship has improved since the project MIRC GREEN was introduced, wolf can now be seen. Each village has been allotted a nursery under the village headman and these inputs have helped in the afforestation programme. Wind power through windmills is also being tapped.

(d) At the micro level, the best example is that of 109 Infantry Battalion TA located just outside Kolhapur. The small cantonment is located among once-barren rolling hills on the main National Highway 4 from Mumbai to Bangalore. Thanks to the initiative of the then Commanding Officer Colonel Prakash Mithare and his Deputy, Major Sohan Singh, the two have restored the tree cover in a period of three years by planting over 400,000 endemic trees in four monsoons with 90 per cent survival. They resorted to contour bunding, prospected for and sank bore wells funded by the local Mayor, and involved the citizens of the city and school children. For these efforts Colonel Mithare was awarded the COAS' Commendation Card and the Unit was honoured by the people of Kolhapur. Another micro level success story was the greening of Bhuj Cantonment thanks to the combined efforts of all ranks of an infantry brigade group. Initially, 10,000 trees were planted by the troops on waste land with conspicuous success. The Forest Department responded by setting up a nursery at their cost within the Cantonment.

There are four ECO TA Battalions now in existence operating in the Thar Desert along the Ganga Canal, in Mussoorie's degraded Hills and in Jammu and Kashmir. Personnel for these units are recruited from ex-servicemen resident in the State itself so that they have a vested interest in their work. Their area of activities cover afforestation, protection, anti-poaching activities, use of alternate means of energy, interacting with the locals, and creating awareness. The problem

is finance. A recommendation has been made for one such Unit in each State of the Union consisting of 1700 All Ranks officered and equipped by the Director General of the TA but deployed on environmental tasks by the State Government concerned. The recurring cost for such a Unit works out to be Rupees one crore per annum. And this is where the problem lies. Who should cover this expenditure. States do not realize the advantages of such units and their value. Their very presence in each State should augment a ready resource when there are law enforcement problems in the State and there is need to requisition the Army. It is hoped that the idea will catch the imagination of the State governments and more such units will be raised.

The other two Services have also not been found lacking. The Navy has encouraged its shore establishments to protect the mangroves along our coasts, conduct awareness programmes and monitor pollution of our coastal waters. The Air Force by virtue of its airfields being 'secure' areas has encouraged the protection of wildlife in these areas. So it is not uncommon to hear partridge calling as a jet takes off. All transport pilots flying over the Ladakh Himalaya have a SOP to record any degradation along their flight paths and the sighting of any rare animals like the elusive snow leopard. One pilot reported the sighting of two humped camels. When it was referred to the Biological Survey of India these animals were identified as Bactrian Camel descendants of those used by Macro-polo along the fabled silk route from China overland to Venice. Officers of these two sister Services are invited to attend the annual ECO Meetings convened by the Army Ecological (Eco) Cell.

There are success stories, though not on the same scale, in other countries as well. The British Army produces a magazine called *Sanctuary* detailing all the work it is doing. For example, it interacts with local bodies in the management of defence lands. The Venezuelan National Guard has for one of its tasks the protection of the country's rich natural resources and forests. The Brazilian Army, at its Jungle Training School outside Manaus on the Amazon River, has replicated painstakingly a piece of the Amazon Forests complete with live specimens of flora and fauna

as a training aid for its troops involved in nature protection activities. Each Bulgarian conscript is required to plant two trees in a soldier's forest and to care for them during his conscript service. The Austrian Army recycles batteries and helps keep the Danube free of pollutants. The Royal Nepal Army helps monitor pollution in the higher reaches of the Himalayas and protects wildlife. And the Vietnamese Army painstakingly restores areas degraded by Agent Orange during the Vietnam War by hand planting trees. Like the Indian Army it is one of the few whose personnel are prepared to soil their hands and bruise their knees. Beyond these individual examples, some 30 countries have pledged their support to a University of Hawaii project which is documenting case studies of the use of the military in environmental protection while the Centre for International Peacebuilding and WCARGA is setting up a data base on this subject.

Conclusion

The potential of the Military in environmental protection cannot be underestimated. In all parts of the globe, the Military are cognizable force socially, and to some extent economically. It has not yet been fully recognized that the Military have a positive role to play in protecting and restoring our degraded environment. On the contrary there are many who are convinced that the Military are only capable of wanton destruction of wildlife and nature. That this is a canard is what this article sets out to prove. Indeed, the Military have a unique non-violent and productive role to play in protecting the environment, creating security and social patterns founded on cooperation and not confrontation. But a word of caution. When swords are converted to ploughshares it must be done without ever blunting the cutting edge of the sword.

Letters to the Editor

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

I

Dear Sir,

Successive governments of Pakistan have reiterated that the number one priority on their national or external policy agenda is to work towards a normal relationship with India. Mr. Ashraf Jahangir Qazi, Pakistan's High Commissioner to India has been merely-albeit diplomatically-rhetorical in his talk given at the USI on "India-Pakistan Relations", *USI Journal* (Apr - Jun 98) while militants aided and abetted by his country continue to butcher innocents in the valley. When he talks of bringing about an improved human rights situation in Kashmir, whose rights is he referring to-the local population's or the militant's?

The fact of the matter is that decisive action by both the countries, and not empty rhetoric, is the need of the hour. Our bilateral talks are making no significant headway and there being no scope for a third party intervention, we are faced with a classic stalemate. Since no worthwhile solution to break this stalemate seems to be emerging from endless dialogues between foreign policy experts on both the sides, may I, even at the cost of being branded naive, offer a humble suggestion in this regard. Why can't both the countries agree to keep unresolved issues on the backburner and cease all hostilities for, say, five years or so. We can then devote this time to relentlessly pursue economic upliftment of our peoples. Thereafter, if still keen, we can get back at each other's throat as hithertofore.

Lt Col Sunil S Parihar

II

Sir,

The article titled "The Arthashastra - Kautilya's Scholarly Treatise on Statecraft" is, no doubt, a well researched one that goes on to highlight almost all the matters concerning a state, statehood and statesmanship.

Chanakya was a man of both letters and deeds. He was a creative thinker, a preacher and a visionary. He meditated, debated and analysed an issue before making up his mind for a solution. But all this came to him the hard way through personal sacrifices, denials and forebearance.

But there was one big deformity in his character which seems to have remained unnoticed by the author. Chanakya himself being a product of the Gurukul and a son of a learned teacher Chanak, was swayed by the traditional conventions of his Gurukul - strict discipline, regulated life, obedience i.e., not to question but to accept and abide by what the Guru stated. While he single-handedly transformed (nay revolutionised) the very *raison de etre* and basic concept of the educational institutions and by so doing he motivated the youth to come forward in nation building, he could not succeed in convincing the Kingdom about his right intentions and had to face many awkward situations. One by one he lost his well wishers and ultimately he had to leave Patliputra for Texila in the quest of more knowledge with an abiding faith in himself to return and liberate his people from the cruel hands of the corrupt and the unscrupulous.

The practice of the Brahmacharis to live on the alms donated by the public at large was never seen by Chanakya as the most humiliating facet of the Gurukul as an institution that goes against the very tenets of the Vedas which he vociferously preached. Had he encouraged and motivated his disciples to cultivate the fields, innovate and manufacture items of daily use, weave their clothes, he would have ushered in an era of self sufficiency which is one of the tenets of the Arthashastra and would have also saved the personal humiliation that they suffered at the hands of the public at

the behest of the King and his Men. Since his teachings held sway for a long time, Indians fell an easy prey to the industrious acumen of the British leading to two hundred years of slavery. Should any one dare say that Chanakay's Arthashastra is thus incomplete. It is this legacy of the Gupta period that has affected the present day Indian State.

There is another lesson that Chanakya conveys to us in the Armed Forces, and that is the planning and provision of logistics support during War.

Victors all over the World have been identified as a symbol of loot and plunder; even Chanakya grants that kind of concession to own troops, though in a milder tone, when he exhorts the victorious King to be considerate towards the public of the defeated state. But isn't it too late for all would have been lost by them by the time the healing touch arrives? This philosophy conveys a message to our tacticians and logisticians to reduce the heavy tail to an extent as can be encashed on capturing the terminal objectives that provide sufficient wherewithal to sustain themselves for some time atleast. The apprehension that the infrastructure and storage would have been destroyed by the enemy before evacuating must be allayed as in today's context it is well nigh impossible to make a complete exodus or else destroy FOL, LPG tanks, foodgrains, warehouses, water, communication systems, etc.

Delving deep into history a little further, one finds that the great Chinese philosopher Sun Tzu enunciated all that Chanakya said or propounded two hundred years later; and the same happens to be repeated time and again. But since it applied more radically to those trying periods as also today, we must trust in the *Chanakya Neethi* moderating it, but, without any doubts on the involvement of the soldier in the tasks entrusted to him from time to time.

Col M C Chadha

Review Article 1

India Exercises Nuclear Option*

LT GEN A M VOHRA, PVSM (RETD)**

From an Indian viewpoint, an event to remember the 20th Century would be the independence of the country on 15 August 1947. History will adjudge other significant landmarks but India becoming an overt nuclear weapon power in May 1998 will certainly be one.

The nuclear weapons debate has been actively waged in India certainly since 1964 when China became a nuclear weapon state. In the second chapter of the book under review, K Subrahmanyam comprehensively traces this right from Dr Bhabha's assertion that India was then in a position to go nuclear in about 18 months to the go-ahead for an underground nuclear test given by Indira Gandhi in October 1972. She gave her assent in the background of the failure of the Sarabhai - Jha Mission in 1966/67 to Moscow, Paris, London and Washington to get a joint assurance from the nuclear weapon powers across the "Cold War Divide," and the despatch by the USA of Task Force 74, headed by nuclear aircraft carrier *Enterprise,* in 1971.

The 1974 peaceful nuclear explosion (PNE) was met with adverse international reactions. Within the country, there was advocacy that India should go along with the US and accept full nuclear safeguards for its plants and research and should respond positively to the Pakistani proposal for a nuclear weapon free zone in South Asia. However, in the June 1978 address to the UN Special Session on Disarmament, Morarji Desai argued that nuclear weapon free zone did not provide security to non nuclear weapon states so long as nuclear weapon states continued to possess nuclear weapons.

Subrahmanyam relates the 1979 conclusions regarding Pakistan's nuclear programme, the US invoking Symington

**Nuclear India.* Ed by Air Commodore Jasjit Singh (New Delhi : Knowledge World in association with IDSA, 1998), pp. 326, Rs. 295.00, ISBN 81-86019-11-1.

**Lt Gen A M Vohra is the former Vice Chief of the Army Staff.

Journal of the United Service Institution of India, Vol CXXVIII, No. 534, October-December, 1998.

amendment and imposing sanctions on Pakistan that year. In 1980, Indira Gandhi gave the go-ahead for further tests after her return to power that year. During Rajiv Gandhi's Prime Ministership, an integrated guided missile programme was started as a further step towards developing India's nuclear option. A case for exercising this option was made in a report submitted to the Prime Minister by an inter-Services Task Force as a follow up of a discussion at a meeting of the inter-disciplinary group convened by Rajiv Gandhi on 5 November 1985.

However, India continued to emphasise the need for nuclear disarmament. Even after January 1987 revelation by Pakistan's Dr A Q Khan to Kuldip Nayar that Pakistan had nuclear weapon capability, Rajiv Gandhi put forward a plan for disarmament at the Third UN Special Session on Disarmament in 1988. This, as well as the earlier Gorbachev - Rajiv Gandhi Plan, made in November 1986, were ignored by the nuclear powers and their allies. Subrahmanyam feels that a disappointed Rajiv Gandhi "appears then to have given the go-head to the Defence Research and Development Organisation (DRDO) to proceed with the Indian weapons programme" and the first Indian deterrent came into existence in 1990. He states that the Indian programme was a secret one. "The Indian posture was that of non-weaponised deterrence capable of being weaponised at very short notice. He justifiably opines that 1995 was a watershed year. The unconditional and indefinite extension of the Non Proliferation Treaty (NPT) left it "with no option but to go in for overt nuclear weaponisation". Narasimha Rao decided to hold the tests towards the end of 1995, which were called off on being discovered by the Americans.

Subrahmanyam's chapter on India's nuclear policy and the first chapter by Jasjit on the raison d'etre of nuclear weapons, sets the foundation of this very timely and useful volume that goes into a whole range of issues vis-a-vis India's emergence as a nuclear weapon state. Jasjit emphasises that the value of nuclear weapons rests on its political power; doctrines and strategy on nuclear warfighting stand discarded. Compared to one occasion of actual use there have been 47 identifiable incidences where their use was threatened in case of existence of asymmetry. He states that

to ensure independence in decision making, India opted to break out of the stranglehold of non-proliferation regime which would have left it with no option by September 1999.

Apropos India's security considerations, a theme that runs through many of the chapters of the book is China's expanding and modernising nuclear weapon capability and the China-Pakistan nexus. In regard to the latter, Uday Bhaskar draws attention to the "determined attempt by the US to either ignore or obfuscate inconvenient reality". The nuclear tests of 1998, says Manpreet Sethi, were conducted in the context of these security considerations as also its disillusionment with the lack of progress in nuclear disarmament amongst the nuclear weapon states (NWS).

He is, however, of the view that a "strong lobby in favour of elimination of nuclear weapons is slowly crystallising, especially within NWS". India, he feels, needs to work harder on these groups to slowly expand their membership and reach.

Some very pertinent issues are highlighted by Savita Pande in her chapter on "Proliferation After the Cold War". Major nuclear powers agreed to reduce arsenals but retain them to prevent others from using them. There is thus a change in doctrine from flexible response to counter-proliferation and use of nuclear weapons against use of biological and chemical weapons and mini and micro nukes, particularly by rogue states. Middle level nuclear powers retain nukes as weapons of last resort. The Chinese, she feels, have been oblivious to any change in the environment and continue proliferation and transfer of nuclear and missile material and technology with a vengeance. In another chapter, Swaran Singh opines that the essence of Communist China's emergence as a nuclear weapon state lay in the very nature of the communist revolution which was anti-hegemonic to the core : the use of nuclear weapons as an instrument of their class struggle and a political weapon to fight against nuclear hegemony of the big powers. This explains its confining itself to a minimum deterrent capability. He writes that China has since travelled far and has become one of the elite nuclear proliferation managers; a status quo nuclear power. At the same time, selective proliferation of nuclear and missile technologies has marked its behaviour. Apart from supplies to Saudi Arabia, North Korea, Iran and Syria, its extensive collaboration with Pakistan is evidence of this.

Sumita Kumar delves into Pakistan's Indo-centric motivation after its defeat in the 1971 War as also its ambition to be the leader of the Islamic world. Its view that nuclear weapon capability would neutralise India's conventional superiority and enable conduct of irregular strife in Kashmir, short of a conventional war, is mentioned. Funds were received from Arab countries, Iran and the Organisation of Petroleum Exporting Countries (OPEC) from 1973 onwards, and Pakistan relied on clandestine imports of sensitive technology. The Chinese connection gets elaborated in this chapter also. A chronology of 'Pakistan's Nuclear Weapon Programme' is provided.

There are chapters on "Ballistic Missiles and International Security", "Pakistan's Missile Programme" and "Chinese Missile Modernisation". The last part of the book deals with the current situation vis-a-vis moratorium on nuclear testing, the issue of signing the Comprehensive Test Ban Treaty (CTBT), command and control of small nuclear arsenals, nuclear diplomacy and nuclear strategy for India. Uday Bhaskar's quote is an apt introduction to this part of the book. He cites Kissinger who says, "A power can survive only if it is willing to fight for its interpretation of justice and its conception of vital interests". In pursuance of this dictum India, as Jasjit puts it in his chapter on "A Nuclear Strategy for India", shifted its position from the classical open option towards a nuclear weapon status. He states that India has possessed recessed deterrence capability for many years. He suggests that our military and nuclear doctrine, derived from our core values will require prevention of war as the prime objective for which we need a credible, affordable deterrent capability at the conventional as well as nuclear levels. This affordable (minimum) capability to dissaude and deter nuclear blackmail and coercion and a possible threat of use is estimated to be two to three dozen warheads. A pre-emptive use by us must be consciously ruled out. Kapil Kak outlines the command and control set up for this small arsenal. He suggests that this could be carved out of the present Central Air Command.

The book considers measures for greater stability in the nuclear environment and makes a plea for disarmament as a solution to the dilemma. The immediate task is obviously to reduce the dangers of this regime by working for interim objectives of detargeting, de-alerting, no first use and delegitimisation.

Review Article 2

Asia-Pacific Security - The Evolving Power Structure and the China Factor

BRIG SUBHASH KAPILA

The commencement of the 1990s witnessed a generally prevalent optimism that the 21st Century would be the 'Pacific Century' - a century of peace and prosperity in Asia - Pacific, especially, a period of vibrant economic activity and sustained growth, led and sustained by Japan's phenomenal economic power. Events like the disintegration of the Soviet Union added to this optimism. As the present century draws to a close, the Asia-Pacific presents a strikingly contrasting picture. Over the horizon of 21st Century Asia-Pacific now hovers strategic uncertainties generated by China's rapid expansion of its nuclear arsenal, military upgradation and modernisation. Added to this uncertainty is the downslide in Asia-Pacific economies, which marked the vitality of the region.

The book, a collection of 32 essays by noted political and strategic analysts put together from "*Trends*" - a monthly publication of the Institute of South East Asian Studies, Singapore, addresses itself to the task of fathoming what the 21st Century portends for Asia-Pacific.

The authors of the initial chapters strongly argue that the multiplicity of regional conflicts at the end of the Cold War disprove the contentions that power in the next century will be defined only in economic terms, that nuclear weapons are redundant and that regional economic advancement does away with arms races and conflicts. The arms build-up in ASEAN spurred by economic growth was not only to cater for potential Chinese threats but also to cater

---

The Evolving Pacific Power Structure. Edited by Derek da Cunha (Singapore : Institute of South East Asian Studies, 1996) pp. 245, $ 28.00, ISBN 981-3055-49-9.

Journal of the United Service Institution of India, Vol CXXVIII, No. 534, October-December 1998.

for intra-regional disputes and friction. The essayists also express doubts on the efficacy of the ASEAN Regional Forum (ARF).

In terms of regional power evolving in the Asia-Pacific, the focus is on China: her economic advancement, an equally significant enhancement in military capabilities and an increasing assertiveness in areas deemed by Beijing to belong to her. Since China will be inclined to constantly redefine its strategic frontiers, including maritime, serious implications arise for Asia Pacific security and also for countries bordering China.

In terms of countervailing power, the United States, Russia and Japan have their own problems. While the United States is committed to maintaining its military presence in North East Asia, it is not so committed to South East Asia. In North East Asia the strategic salience of the US military power stands eroded by rising military power.

The essayists point out that the current limitations of Russia precludes it from playing any significant role, though its membership of ARF may give it some say. Japan is stated to be still following an uncertain and an embivalent role, despite China's growing military power.

The ARF's role and potential have been discussed in a couple of essays. Doubts have been expressed on the effectiveness of ARF as one of the mechanisms contrived to draw-in China into regional multilateral discussions on Asia Pacific Security as also to keep the US militarily engaged in the region.

This book is an excellent summary of the emerging security environment in the Asia Pacific. Besides its obvious value to strategic analysts, it is strongly recommended for study by Indian Parliamentarians, media editors and analysts, many of whom projected a poor grasp of China-related security issues during the nuclear-weapons debates in May-June 1998 and in the process distorted the true-importance of the historic moment - an assertion of India's will to build up its national power after centuries of reactive

existence. Some of the lessons gathered from a reading of this book are :-

(a) Economic power cannot supplant military power. National power requires a strong, efficient and well poised military set-up.

(b) Nuclear weapons have utility in power projection besides their deterrent value.

(c) China is identified as the Asia-Pacific potential hegemon and has to be balanced.

(d) The ARF has limited utility to restrain or balance China.

(e) As Chinese military capabilities enhance in parallel with Chinese economic power, China will be tempted to redefine strategically its borders with countries of the region.

(f) India along with Taiwan, Japan and Vietnam are being viewed by People's Republic of China (PRC) as potential threats.

It is commonly said that forewarned is fore-armed. To that extent this book is a must for study by those who are seriously interested in planning our national security.

Review Article 3

The Intelligence War in the Far East : 1930-45

LT GEN S L MENEZES, PVSM, SC (RETD)

This is an unquestionable magnum opus by the author of "Odd Man Out : The Story of the Singapore Traitor", *USI Journal* (Oct-Dec 1993) and "Singapore : The Pregnable Fortress - A Study in Deception, Discord and Desertion", *USI Journal* (April-June 1995). Intelligence played a vital part undoubtedly, ultimately, in the Allied victories in the Far East and South East Asia, in World War II, but for the Japanese, intelligence, and all the aspects connected with it, had always played a paramount role in all their commercial and military ventures. In this context, the author, therefore, lucidly encapsulates the origins of Japanese imperialism. As Japan modernised in the previous century, her manufacturing industries grew, and she found herself short of raw materials and overseas markets. She viewed the large deposits of iron-ore and coal in Korea, and, in 1876, under military threats, Korea was forced to open up to Japanese trade, hand-over control of its customs revenue, and surrender some extra-territorial rights. As China held suzerainty over Korea, Korea desperately sought China's help. Japan ignored the latter with China yielding, inter alia, its hold over Korea.

In 1905, the Japanese defeated the Russian fleet, the Russians agreeing to certain concessions in Southern Manchuria, including the transfer of the base of Port Arthur to Japan. It was from this year that one saw an expansion in the activities of the ultra-nationalist elements in Japanese secret societies, and an increase in their influence on the armed forces. Out of these secret societies was to grow the modern Japanese intelligence services.

**Far Eastern File : The Intelligence War in the Far East, 1930-45. By Peter Elphick (London : Hodder and Stoughton), pp. 510, £ 20.00, ISBN 0-340-66583-1.*

**Lt Gen S L Menezes is the former Vice Chief of the Army Staff.

Journal of the United Service Institution of India, Vol CXXVIII, No. 534, October-December 1998.

Sequentially, Korea was annexed in 1910. Thereafter, Japan entered World War I on the Allied side in accordance with her treaty with Britain. It was the size of the Japanese naval contribution in the Allied naval patrols and convoy protection that gave the Japanese high standing at the Paris Peace Conference.

The author meticulously narrates how intelligence continued to play a prominent role in the Japanese 1931 conquest of Manchuria, their subsequent victories in China and in their preparations for the further impending World War. Japanese undercover penetration throughout the Far East and South East Asia was comprehensive, with agents and fellow travellers all over. Japanese fishing fleets spied on all naval and shipping events, and surveyed the possible landing beaches. Japanese even worked within the very vicinity of the Singapore naval base, and at least one within it. All over in South East Asia and even in India, Japanese military officers in disguise were busy. From their reports, Japan built up comprehensive intelligence profiles.

Furthermore, Japan did not neglect subversion and the use of the fifth column. From early on, Japan planted local agents in remote places, who would in due course act as guides to invading Japanese forces. Thus while Japan's pre-war use of traditional intelligence-gathering was excellent, the Allied pre-war intelligence gathering effort was amateurish. Curiously, the Allies placed greater emphasis on crypto-analysis than did the Japanese, the latter hitherto always being the aggressor, possibly did not see the need to concentrate on this facet. Therefore, by the time they launched attacks all over in December 1941, the Japanese had done their intelligence home work well. In no place, perhaps, in the author's opinion, was this more evident than in Malaya. The late Lt Gen Sir Lewis Heath, GOC of the doomed 3rd Indian Corps, which was at the sharp end of all the initial battles in Malaya, was later to contrast the striking intelligence advantages accruing to the Japanese invading forces with the "crabbed work of our secret service and counter-intelligence services." Heath was seemingly not even made privy to "Special Intelligence" and "Sigint" information. Over the years, several British servicemen had been suborned into supplying the Japanese with additional valuable information, the most important

agent among the British serving the Japanese in Malaya being Capt PSV Heenan, 16th Punjab Regiment, an Air Intelligence Liaison Officer, who had spent his six months earned leave ex-India in Japan, where he had been supplied women, and been won over. A Japanese cypher message intercepted and read by the British as early as 10 August 1941 may have referred to Heenan as "the British Army Captain" providing certain information, but the note to the decrypt merely states, "the identity of the British Captain is unknown to the War Office."

If the Japanese had plans to invade Malaya, the British also had plans for a pre-emptive strike into Thailand, in order to take up positions within five days at Singora and Patani, on the east coast of Thailand, where it was correctly forecast, the Japanese would land. The British plan was *Operation Matador*, which was never fully implemented. The British-Indian forces stationed in northern Malaya had spent several months preparing and deploying for this pre-emptive strike, and for little else. Thus the eventual belated changeover, from the 'Matador' deployment to that required for defence, created the circumstances for a major defeat for the British - Indian forces, the one that presaged all that followed. Militarily, 'Matador' made good sense, but the political drawback was that the plan entailed an attack on a neutral country. The USA's agreement to a pre-emptive strike had therefore to be sought. Even on 6 December, with the Japanese invasion armada already en route, the British envoy in Bangkok was pleading that Thailand's neutrality must not be violated, Whitehall having only given conditional clearance on 5 December for 'Matador' to be implemented. By then, it was too late, for by 7 December it was clear to the Commander-in-Chief Air Chief Marshal Brooke-Popham that Japanese landings were imminent, a British Beaufort reconnaissance plane having been shot at after photographing 60 Japanese aircraft parked at Singora airfield in Thailand. Then on 8 December, Admiral Sir Tom Phillips sallies forth in HMS *Prince of Wales* and HMS *Repulse* to deal with the Japanese landings without having ensured adequate air cover, because Phillips had the idea that the Japanese naval air efficiency was slightly lower than that of the Italians. Astonishing you may think, but read on, as this masterly factual exposition unfolds like a macabre "black" novel. An unputdownable read.

Short Reviews of Recent Books

Tackling Insurgency and Terrorism : Blueprint for Action. *By Col Bhaskar Sarkar, New Delhi : Vision Books, 1998, pp. 160, Rs. 280.00, ISBN 81-7094-291-8.*

Insurgency and terrorism are subjects of contemporary military interest in the world in general and the Indian subcontinent in particular. The anomalous structure of Indian socio-political and economic fabric will render the country ever vulnerable to the vicissitudes of a rebellion. Yet literature of military interest theorising the insurgency scenarios, providing operational derivatives to forces on the ground in this nebulous environment is limited. Colonel Sarkar, an erudite military engineer, has attempted to fill this void by covering the gamut of insurgency and terrorism in India in one slim volume. The broad canvas covered by the author includes the basic rudiments of revolutionary warfare, brief histories of insurgency in India, non-military dimensions of insurgency as also the mechanics for conduct of operations against insurgents.

In the first part "Understanding the Problem", the author covers the background factors of insurgency and terrorism providing a panoramic view of this phenomenon in India focussing on Kashmir, Punjab, Assam, North-East and the Naxal movement, and has rated the insurgencies in Kashmir, Assam and Punjab by allotting scores to each of these determinants, to the militants as well as the Government forces. The aim of the author is to perhaps focus attention on the key factors affecting the state of insurgency in these states. The outcome, however, appears too generic and subjective. The values allotted have to be established through wargaming and the subject is covered in detail by the American military historian Trevor N Dupuy. Devoid of explanation of rationality of the model, the score cards devised by the author lack credibility and could prove misleading if adopted without recourse to deliberate analysis in similar situations elsewhere.

In the second part on countering insurgency, however, the author comes up with many interesting observations on anti-insurgency operations and has made valuable suggestions on the battle for the hearts and minds of the people. Acceptance of genuine political aspirations of the populace within the constitution, creation of a unified command, conduct of military operations at the higher and the battalion level, reorganisation of intelligence set up, use of high technology equipment and nuances of security of individuals are some of the topics covered very lucidly with examples. Of particular significance is spoofing the myth of insurgency being a mere military problem, towards which Colonel Sarkar has focussed on other equally important facets such as the role of political leaders, media and the judiciary. He could have also included the bureaucracy, for these important instruments of governance in a democracy either willingly abdicate their responsibility or are frequently subverted by the insurgents by physical or ideological coercion.

Keeping in view the scope of the subject and ambit of the study, a greater focus on each of the facets could have added to the value of this primer which otherwise is a good, holistic introduction to the problem of insurgency in India.

Colonel Rahul K Bhonsle

Pandaemonium : Ethnicity in International Politics. *By Daniel Patrick Moynihan, New York : Oxford University Press, 1994, pp. 221, £ 13.99, ISBN 0-19-827946-9.*

Senator Moynihan's career has been followed with some interest as he was once the US Ambassador to India. It was one among the distinguished appointments he has held that include Presidentship of the Security Council; US Representative to the UN, and Ambassador to Japan. These assignments are a tribute also to his intellectual credentials, the ultimate acknowledgement of which was in the form of an invitation to deliver the Cyril Foster Lecture at Oxford University in 1991. The book under review grew out of the Senator's lecture notes, and given the contemporenity of the issues it deals with, is a veritable ringside view of recent history on the make. The book has since attracted favourable reviews, beginning indeed with a complimentary foreword by none other than Adam Roberts.

The subtitle encapsulates its theme as being 'Ethnicity in International Politics'. Clearly the smug pronouncement of the 'end of history' was premature, as the Senator demonstrates in this overview of the rash of ethnicity. He is critical of the US response as reactive, conservative and possibly 'hyper realist'. In his opinion "the challenge is to make the world safe for and from ethnicity". On how to do so, he is taciturn-"contain the risk; restrain hope for too much altruism or commonsense". In short - American isolationism, a not unwelcome recommendation given American proclivity to adventurism and pontification, whilst ignoring ethnic fissures in its own backyard - which, it must be mentioned to the author's credit, does find mention in his book.

Major Ali Ahmed

Ethnic Insurgency and National Integration: A Study of Selected Ethnic Problems in South Asia. *By Mahfuzul Haque, New Delhi : Lancers Books, 1997, pp. 249, Rs. 380.00, ISBN 81-7095-067-8.*

In the post-Cold War world, culture and ethnicity driven conflicts have riveted the attention of political scientists world over. Mahfuzul Haque, a scholar-bureaucrat from Bangladesh too has ventured into the vast quagmire of cultural strife through study of selected ethnic problems in South Asia. The work, the consequence of a PhD dissertation for the Rajshahi University in 1995, has focussed on the crisis of identity in South Asia through a study of four ethnic

groups; the Chakmas of Bangladesh, the Tamils of Sri Lanka and the Gorkhas and Jharkandis of India. Adopting an eclectic approach, the author has very extensively explored the problem of ethnicity in the subcontinent in all its dimensions and has produced a work of significant scholastic import which will contribute towards understanding factors for maladjustment of fringe elements of South Asian society.

In the initial chapter, theoretical concepts of ethnic nationalism have been analysed to conclusively prove that the conservative-humanitarian paradigm for integrating people of diverse ethnic background into a single governing entity is ideally suited for South Asia. The subsequent chapters seek to examine features that have contributed to ethnic resurgence of the four main political groups selected for study. These include background factors, threats from modernisation, peripheral economic development and impact of pervasive societal communication transmitting rabidly radical ideas with surprising alacrity. Reasons for the crisis of identity manifesting into insurgency and mal-integration have also been analysed in detail. The book thus provides a credible insight into the factors contributing to the conflict situations. The numerous charts, maps, diagrams, copious notes and references add value to the lucid narrative.

Viewing conflicts through a monochromatic ethnic prism is however fraught with risk in the South Asian context, as struggles for economic and political empowerment have been frequently projected as ethno-religious problems. Thus the author's basis for selection of the Gorkha and Jharkand agitation can be faulted, for these are essentially movements of politico-economic assertion within the constitutional framework of India and not strictly ethnic issues. The Naga or Mizo movements would have been more credible for the study. This thorough and painstaking research has also not thrown up any fresh thoughts for resolving the live problems from which the people of South Asia are mired in years of poverty. The book, thus, does not emerge from the shadows of a research treatise to provide implementable formulations for a better South Asian future, an expectation with which every reader would have perhaps commenced reading it.

Colonel Rahul K Bhonsle

World Disasters Report 1996. *By International Federation of Red Cross and Red Crescent Societies, Oxford : Oxford University Press, 1996, pp. 178, ISBN 0-19-829080-2. (Price not indicated)*

The "World Disasters Report" is the only annual, global report concentrating on disasters, from earthquakes to epidemics, conflicts to economic crises, and on the millions of people affected by them. It is published in English, French, Spanish, Japanese, Finnish, Swedish and German. It analyses cutting-edge issues, assesses practical methodologies, examines recent experiences and

compiles comprehensive disasters databases. The report for 1996 is in five sections dealing separately with crucial key issues, methods and procedures, catastrophic disasters of 1995, disasters database and the Red Cross and Red Crescent Societies. It is fully illustrated with photographs, graphics, and impressive pie charts and graphs, which lends this noble and definitive compilation compassion and credibility.

Political interest of countries most prone to refugee problems is not adequate. This results in NGOs and donor nations spending astronomically increasing funds on relief on humanitarian grounds. Chapter 1 of the report examines the factors that have lead to such growth, and considers the future of the refugee-response options. Grotesque, revolting and haunting images in stark reality of hunger, deprivation and on gender discrimination, benumb our senses-slight, frail and half-starved Bangladeshi women in villages, pained and confused faces of children staring vacantly out of camps in the war-torn sub-Saharan Africa, even bedraggled old men foraging for food in the waste bins of peripheral cities of the otherwise opulent US and this despite the fact that there is no dearth of food in the world as a whole! The second chapter examines the reasons - ecological, political, economic, and cultural-for such lamentable and widespread misery. It goes on to consider why millions lack access to resources and livelihood and why millions suffer outright gender-based cultural discrimination and denial of nutritious diets. The chapter titled "The State of the Humanitarian System", examines policy trends in the international relief system focussing on the responses to conflict-related crises. Defining objectives and values in the face of uncertainties of foreign policy and aid policies, their single-minded pursuit is recommended for tangible and timely succour. Another chapter deals with the impact of displacement and destruction in the Balkans; with a box item on the menace of mines. The food disaster in North Korea highlights the impact of sudden flooding, the response by national and international agencies and the wider context of the country's economy, agriculture and foreign relations, especially its so called "disaster-aid diplomacy". Stories of survival highlight the outstanding endeavour of the Korean chapter of the Red Cross.

The role of the military in disaster relief and humanitarian work is criticised; poor show by the military forces of different countries active during the Rwanda crisis of 1996 is cited as an illustration. Overall, in Rwanda, the military proved to be exorbitant in outlays, operated under unreliable and unpredictable political control, were usually unprepared and inexperienced for executing humanitarian missions, had communication problems with aid agencies and also beneficiaries, diverted funds from targeted purposes, and prevented aid agencies or commercial contractors from developing the capacity to respond economically.

All in all, it is an ennobling experience to study this moving report. One wishes the Red Cross and Red Crescent Societies more power and pecuniary

windfall; for the world at large, more compassion and sense; and more hope and luck to the miserable millions.

Lieutenant Colonel A K Sharma (Retd)

South African Yearbook of International Affairs : 1996. *Johannesburg : The South African Institute of International Affairs, 1996, pp. 348, R. 55.00 (SA), ISBN 1026-5651.*

The South African Yearbook is unusual. It is not just a compilation of facts on the nations of southern Africa but also a worldview of South African experts before the dawn of the new millennium.

In the chapter on "South African Lessons from India", Greg Mills, the editor of the publication, writes about "such poverty alongside accelerating economic growth and vibrancy" which has been "constructed on the foundation of agricultural self-sufficiency". He speaks of India's first lesson and awareness that international capital is not as philanthropic as some in South Africa believe it should be. South Africa is in the Indian Ocean Rim. It has concerns that often coincide with India's. An Indian Ocean Rim Community has been discussed but not yet formulated. It remains a stimulating concept and prospect: with ramifications political, economic and defence oriented.

The Yearbook is full of deep insights and valuable for those who wish to know about a continent that is beginning to assert itself. In the opinion of this reviewer Africa stands at the crossroads of past, present and future. It is a continent that will shake the world in the 21st Century as the African factor influences the world's economy and thereafter political and military establishments around the globe.

Lalit Sethi

New Studies in Post-Cold War Security. *Ed by K R Dark, Aldershot UK : Dartmouth, 1996, pp. 281, £ 42.50,* ISBN 1-85521-728-7.

Defining the changing contours of post-Cold War security has been a challenging task in the 1990s. The book under review is a collection of eight essays examining strategic issues in different parts of the world in the post-Cold War era. The emphasis in this book is more retrospective in character rather than on the emerging security environment.

While the first two essays analyse the changing form of post-Cold War security and its impact on nuclear weapons strategies, the remaining essays, with the exception of the concluding one on Britain, dwell on the impact on Asia, with special reference to China and Russia. The focus on Russia, Turkey and Central Asia seem to be prompted by NATO's interest in these areas. In Chapter

l, Ken Dark makes the point that since China is less committed to non-proliferation and non-expansionist policies, it is more likely to engage in a nuclear conflict. For Indian readers, Ken Dark's "China and International Security in Asia" makes for interesting reading and thought provoking conclusions, namely :

(a) China's continued nuclear testing indicates an expanding nuclear weapons programme with a focus on MIRV's.

(b) The greatest international security threat may be China's expansion into Central Asia.

(c) The risk of a nuclear war involving China, is either in the event of a Russia-China conflict or a conflict with India.

The above conclusions should illuminate the Chinese threat for the benefit of India's media elite who seem to be totally oblivious to this aspect as reflected in their recent diatribes against India's nuclear tests.

Brigadier Subhash Kapila

The Liberal Political Tradition : Contemporary Reappraisals. *Ed by James Meadowcroft, Cheltenham, UK : Edward Elgar, 1996, pp. 200, £ 49.95, ISBN 1-85898-083-6.*

The book is a 'contemporary reappraisal' by major theoreticians of liberal political thought. Not unexpectedly therefore, it is a heavy dose of jargon and ideas with which the reader may be unfamiliar and thereby daunted. But then the book is not intended for the uninitiated. It is for the fellow thinkers and their students.

The book surveys liberalism in thought, variants, practice and impact. It explores internal divisions, external overlaps, contemporary directions and critiques. This broad scope makes it a useful guide in locating liberalism in the modern economic and political context; in contrasting it with its philosophical antipodes-conservatism and socialism-and in understanding the dialectic between western, market-based, representative democracies and 'communitarian' and authoritarian societies in the Confucian and Islamic world. It is the exposition of the latter context that makes clearer the implications of decline of liberalism in our society.

The book begins with a macro-scape of liberalism in its historical and philosophical perspective by Freeden; then goes on to review economic and political liberalism; thereafter it juxtaposes liberalism with feminism and post-modernism; and concludes with powerful critiques by Arblaster and Barker. For the persevering, it is recommended for the nuggets of insight it offers on the individual, society and states in the context of freedom and responsibility.

Major Ali Ahmed

A Global Ethic : The Leadership Challenge. *By William D Hitt, Ohio : Battelle Press, 1996, pp. 182, $20.00, ISBN 1-57477-016-0.*

The world today has become a village due to tremendous progress in communication, transportation etc. It is time, therefore, that the leaders come out of their shells and look at the problems facing the world community. The urgent ones being environmental degradation, the threats of war and mass destruction, and population explosion. The threats are real. To face them the people of the world must unite and focus on the future of humanity. This unification will be easier today, with availability of Internet and E mail. As a natural follow up, they would need to evolve a global set of moral principles to guide the people of the world transcend national, cultural, economic and religious differences.

Dr. William Hitt has discussed this subject with great competence and thorough research. He has analysed what global ethic is, its need and the framework required for its implementation, so that the world begins to function as a single body rather than a set of isolated nations.

A very thought provoking book, which has dealt with an important subject concerning the future of humanity. A must for every library.

Major General Ram Nath (Retd)

Human Rights and the Indian Armed Forces : (A Source Book). *By Air Cmde PV Kumar and Gp Capt B P Sharma, New Delhi : Sterling Publishers Private Limited, 1998, pp. 363, Rs. 565.00, ISBN 81-207-2055-5.*

There is considerable documentation available on human rights and by itself the Indian Armed Forces form the subject of several tomes on India's security. Yet, there is very little material on a combination of human rights and the Indian Armed Forces. The authors have attempted to make up for this paucity of material.

The book gives exhaustive details on the enforcement of human rights, for example, the Convention on the Prevention and Punishment of the Crime of Genocide, International Covenant on Economic, Social and Cultural Rights and the Universal Declaration of Human Rights which is the umbrella for all other protocols on human rights. The authors have dealt in detail with human rights in the four conventions which deal with the wounded and sick, maritime, treatment of prisoners of war and of civilians.

The chapter on Human Rights and the Indian Army is an interesting mix of facts and figures on the one hand and allegations levelled against the Army on the other. There is an understandable bias in favour of the Army in multifarious situations in which terrorism was involved; for example in 1993-94, out of the

174 complex cases that came for disposal before the Human Rights Commission of India, only 10 referred to alleged excesses by the Armed Forces, which works out to a mere five per cent The authors stress that this number includes cases against the paramilitary forces which are also involved in counter-insurgency operations. In 1995, 36 cases of violations were brought to book. Again, an insignificant number of violations of human rights were tagged to the Army. The core issue is, why violations occur when they do and how can they be prevented. Some attempt has been made to tackle the issue but it is not enough.

The authors have adequately brought out that the Acts that govern the Army, Air Force and Navy have their legal constitutional basis, and ensure security of physical well being. In the past decade, the establishment has shown more sensitivity in dealing with human rights issues. There are educational and training programmes for the Services personnel. A deep sense of democratic and egalitarian values, inspite of the hierarchy the Services perpetuate, has to be inculcated in the Armed Forces. This is almost a contradiction in itself because the Armed Forces are trained to react forcefully and aggressively against external threats and, very quickly, under other circumstances they are meant to react sensitively and with 'softness' to the situation at hand. This is not impossible, but a very difficult task. This sensitivity has to be nurtured and furthered. This point is well brought out in the book and the authors have tried to substantiate it by detailing the humanitarian work done by the Services.

More work based on a book like this ought to open up a new discourse between the armed forces, policy makers and citizens of the country.

Dr Veena Ravi Kumar

"A House Divided..."; A Century of Great Civil War Quotations. *Ed by Edward L Ayers, New York : John Wiley & Sons Inc., 1997, pp. 258, $ 14.95, ISBN 0-471-19264-3.*

Edward Ayers is Professor of History at the University of Virginia. Along with Kate Cohen, he has come out with an excellent compilation of quotes from the American Civil War. In all, 48 books have been gleaned for the material. This is arranged essentially under three main chronologically arranged chapters "Coming of the War"; "Fighting the War"; and "After the War". Each of these has a sub-section listing topics ranging from the battlefield to the homefront; from the hospital tent to the prison cell; from New England to Texas. Men and women, soldier and civilian all get to have a say. A subject index, appended separately towards the end, aids accessibility. For the less informed on the Civil War, Ayers has given a definitive chronology.

The protagonists speak directly to us: voices of commanding generals and those of the common soldiers both Black and White; voices of hope and those of abject despair, voices of weariness of the aged and confusion of the young; those of sympathy as also those of vengeance and animosity. The wail

of the wounded, the plight of the fallen on the battlefield and the despair of those who live through-it all is there in sharp contrast. We hear of the pompous pride of the victorious jingoistic generals and the crushing doubt of the defeated or the ones despatching soldiers to their deaths for a losing cause. Poignancy personified; a house divided; indeed! Divided between the victors and the vanquished; the North and the South; the Black and the White; those for slavery and those against it; the Unionist and the Confederates : this divide hardly disappeared after the civil war, or even later. To this extent this book contributes towards a better understanding of the civil war; or even war per se.

This review would not be complete without mentioning a few quotes :-

* "No terms except unconditional surrender can be accepted."
Grant, to the defeated Confederate General at Fort Donalson, thus gaining the nickname 'Unconditional Surrender Grant'.

* "By the way, can you tell me where he gets his whiskey? He has given us successes and if his whiskey does it, I should like to send a barrel of the same brand to every general in the field."

-- Abraham Lincoln, responding to Grant's drinking habits.

* "The glory of history is indifferent to events : it is simply Honour."

-- Edward A Pollard, Confederate editor - A letter on the state of the War, 1865.

* "War is dreadful thing, but there never was such a war as this and I sincerely hope there never will be again."

-- WA James, Confederate soldier.

* "The common private soldier earns enough in one month to buy a pretty fair watermelon."

-- TP Forrester, Confederate soldier from Georgia, September, 1864.

* "I'd think that the most forlorn picture of humanity is a rebel soldier taken prisoner on a wet day".

-- Allen Landis, Union soldier's letter to parents.

* "Now he belongs to the ages."

-- Edwin M Stanton, US Secretary of War, at Lincoln's death, 15 April, 1865.

* "Let us have peace."

-- Grant; campaign slogan, 1868 Presidential elections.

* "History deals with what is, and his folly to discuss what might have been."

-- Sherman, Union General.

* "Grant, Sherman, Thomas, Lee, Johnston, Jackson, Hood, all the rest gradually vanished like the dinosaurs, but for a while they were giants that ruled the earth. In their prime, probably no armies as yet assembled could have matched them."

-- Winston Groom 'Shrouds of Glory' 1995.

All these facilities along with a superb juxtapositioning of historical pictorials makes for a delectable and moving browsing of the book, a memorable feast of words and quotes.

Lieutenant Colonel A K Sharma (Retd)

Free India's Army : Problems at 50. *By N Kunju, New Delhi : Reliance Publishing House, 1998, pp. 131, Rs. 150.00*, ISBN 81-7510-087-7.

As a journalist, the author, N Kunju, has been frequently writing about the Army and its problems and has a number of books about the Army to his credit. His latest book - *Free India's Army : Problems at 50* - is a collection of such articles and essays written by him.

In the initial chapter the author correctly brings out the little known contribution of the defence forces to India's freedom struggle. He rightly states that this contribution is hardly recognised by the public in general and the politicians in particular. Neither are the warriors who laid down their lives, in the wars fought after independence, given the recognition and respect that is their rightful due.

The author deals with several relevant and important problems that the Army faces today. Unfortunately in his analysis of such problems his inherent resentment against the officer cadre, and especially against those of more

senior rank, seems to affect his objectivity and judgement. He sees some vested interest in any proposal made by senior officers, retired or serving.

To effect financial savings the author suggests a number of measures, which merit consideration. But in the cases concerning combat arms and fighting units, especially of the infantry, the author needs to appreciate the importance of the Regimental system for building up and fostering a unit's team and fighting spirit, which is so essential as a war winning factor in combat.

The author is perhaps justified in his criticism that the Army still continues to follow the British policy of organising armoured and infantry regiments on caste, religion or regional basis. The author has not, however, noted the gradual change that has been brought in the recruitment pattern of these regiments. Today Bengalis are found in the Rajput Regiment and Mahars, and Marathas are a minority class in the Mahar Regiment and in the Maratha Light Infantry.

There are some factual errors that need to be corrected. For instance the author's claim that the Punjab Regiment was used by the British to fight Tipu Sultan is historically incorrect. Then to say that in World War II officers were given lesser number of gallantry awards than those awarded to other ranks is again not borne out by facts. As an example he states that the late General PS Bhagat was the only officer to be awarded the VC as against all the rest going to other ranks is incorrect as he has failed to take into account that the Army was then mainly officered by British officers and many of them were awarded the VC. He has also missed out another Indian officer, Lieutenant Judge, who was awarded the VC posthumously.

It is good to have a bottom up review of the affairs of the Army by somebody who has served in the ranks. He is able to throw light on various problems of the Army from a different angle and perspective. For this sincere effort, the author certainly deserves credit and his views need to be given due thought and consideration.

Major General SC Sinha (Retd)

The Russian Army in a Time of Troubles. *By Pavel K Baev, International Peace Research Institute, Oslo, London: Sage Publications, 1996, pp.204, £39.50 (paper), ISBN 0-7619-5186-5.*

The Soviet Red Army was perhaps the most gargantuan military structure ever created in human history. The traumatic dissection of this mighty force into one major-Russian-and numerous minor appendages was expected to cause tidal waves of turbulence. Pavel K Baev, a researcher in the Russian Academy of Sciences, Moscow has very copiously documented these convulsions in a work of significant contemporary interest, from a politico-military perspective. The rigorously researched and analysed book has been presented in a

military scholastic style, typical of all Russian soldier savants as Triandifillov and Vorshilov, and has succeeded in caricaturing the half decade old existence of the resurrected Russian Army, providing a glimpse of its role at home and abroad.

The transformation of the Army in 1991 was beset with a number of problems, much in a similar way that had confronted the Indian Army half a century ago, though of a different nature and form. These were identified as lack of formalised, functional, political institutions, poor budgetary support, the Frankenstein of Afghanistan, absence of a visible adversary as the NATO to focus its strategy but many diffused and invisible smaller antagonists, the result of fratricidal proclivities of centrifugal forces unleashed by federalisation and a consequent lack of doctrinal penury for fighting low intensity conflict operations.

The author identifies the role of the Russian Army as that of an instrument for Russia to regain its *primus inter pares* status within the littoral of the Eurasian landmass, in the first instance and its overall global primacy of yesteryears, as an ultimate goal. To support this hypothesis a scholastic narrative is weaved on a very broad canvas to include the historical perspective, security interests, political control over the Armed Forces in Russia, Europeanising of the Army, handling post-Soviet conflicts and the Army's role in peace-keeping in the post-Soviet Space. Of great interest is outlining of the Russian Army's role and operations in Chechnya, where the tragedy of employing faulty tactics, form of war and type of troops is compared by the author to the Russian ignominies in the Crimean War 1854-1855 and Russo- Japanese War 1905. To the Indian historian, the Chechen operation could well replicate Sri Lanka, with the drive to Grozny as comically executed as that to Jaffna, inter-organisational squabbles between the Army and the Federal Counter Intelligence Service (FSK) acting at cross purposes and the naivette of the ground troops sans training, experience and doctrinal support.

In summation, it would be evident that the Russian Army has lost a historic opportunity to restructure its bloated material and manpower profile. It vacillates between seeking a greater political role and professionalising its cadres for which paradoxically funds will only be forthcoming with clout in the Government and while it is keen to regain its lost operational glory, it is lacking in the vision and will, to redefine its role from supporting Great Power status to that of national reconciliation. The book provides a number of lessons for the Indian Army – the perils of politicisation, fulfillment of conflicting operational goals between high intensity and low intensity conflicts and the futility of dependence on large force structures based on manpower, tanks, fighters and missiles when modern armies of the world are shifting their focus to information-dominated systems. Baev's seminal work of military erudition is, therefore, a must read for the serious Russologist and the military student alike.

Colonel R K Bhonsle

Dangerous Men: The SAS and Popular Culture. *By John Newsinger, London: Pluto Press, 1997, pp. 160, £10.99 ISBN 0-7453-1206-3*

This book is as much a story of the SAS as it is an analysis and celebration of the manifestation of the very popular SAS folklore in the modern media and the traditional imagination of the genuine true Britisher. The Special Air Regiment is perceived both as the protector and avenger for His Majesty's Government and the Crown. It is somewhat emblematic of the staunch and stoic British individualism. The phenomena of recent rash glut of immensely sought after books, periodicals, magazines and money grossing films is analysed in the light of the much hyped Mambo-culture, and its excessively aggressive masochism, graphic violence and martial prowess that is generally echoed in most of the material. The author, John Newsmonger, who lectures in History and Irish Studies at the Bath Spa University College, very professionally examines the use of all this hoopla and its role in perpetuating myths of muscle-flexing nationalism and politically expedient jingoism.

A preliminary examination of the immense and still growing mass of material that celebrates the SAS has been essayed by Newsinger. A balanced and thought provoking assessment has been made as to its significance as a cultural and political phenomena. Actual and factual military and regimental history of the SAS is given in the first chapter. It has been clearly brought out that the SAS has in fact become a myth with its reputation far outshining spectacular and stunning successes and its military value. In the second portion of the book, a moment has been spared for autobiographical and first hand narratives of the men who had served in the SAS. These have been published in two lots; first, immediately after WW II that dealt with all aspects of irregular warfare; and the second, after 1980, when there was an over proliferation of best sellers like *Looking For Trouble, Bravo Two Zero, The One That Got Away* and *Biting The Bullet*-the last mentioned written as personal account by a SAS-wife. The third chapter relates to books on histories, illustrated coffee table glossies, and survival manuals of sorts; magazines, films, vedios, TV serials and features that go all the way in romanticising and glorifying the SAS. The survival literature in particular shows the way in which these cultural artefacts home on to social fears, insecurity, and awe and go on to impinge on the political debate, the cases in point being the SAS assault on the Iranian Embassy in London in 1980 that set to rest the debilitating Suez Syndrome. The last section discusses fiction involving the SAS, mostly novels that centre-stage counter revolution, though a few also attempt to negotiate the other way.

Projection of the men of the SAS as status and cult symbols for the British as a nation, was unmistakably a Thacherite brainwave. The idea was to redefine the British national identity, and the SAS served her purpose with their usual dare-devilry and do or die approach. The public was fascinated. Of course, this fascination with the SAS will die out sooner or later. The British MoD will eventually return the Regiment to barrack room. The SAS will nevertheless carry on relentlessly, adding more gloss to the saga of these dangerous men.

A thoroughly enjoyable and engrossing read. Strongly recommended to our own boys in red berrets, black berrets and the common soldiery. The PRO people could also pick up an idea or two.

Lieutenant Colonel A K Sharma

North Korean Special Forces (Second Edition). By *Joseph S Bermudez Jr., Annapolis, MD; Naval Institute Press, 1998, pp. 328, $39.95, ISBN 1-55750-066-5*

Joseph Bermudez is a consultant to the US and South Korean Governments and has a number of books on North Korea, West Asia, Intelligence Affairs and third world missile development to his credit. He wrote a book on North Korean special forces about 10 years back and has revised it. The present book has enormous value for India's foreign and defence policy planners.

According to the author North Korea has a formidable military machine with a million standing army and a 100,000 strong special force to carry out their missions regardless of the cost involved. The task of the North Korean Army is "annihilating US and South Korean forces and reuniting the two Koreas". With the prevailing mass hunger in North Korea the "annihilation" aim has received a setback. With the US wooing China not just for the market but also for some hidden military reasons, North Korea, the protegé of China, may now be less of an American enemy. It cannot be ruled out that one of the US policy options might be to befriend a foe, even when starving, as the cost of neutralising or finishing him may be too high. So far no indications of US-North Korean contacts have come up on the surface.

A good reference book for research scholars.

Commodore R P Khanna, IN (Retd)

The Unforgettable Army: Slim's XIVth Army in Burma. By *Col Michael Hickey, Tunbridge Wells, UK: Spellmount Ltd., 1992, pp. 318, £25.00 ISBN 1-873376-10-3*

A number of authors including those who had taken part in the Burma Campaign have written about the 14th Army which had soldiers, sailors and airmen from Britain, India, Nepal, Africa, Burma, America, China and many other countries. The author of this book, a retired officer of the Army aviation, is a professional writer having to his credit several books and articles including the special study of the Burma Campaign for the staff college entrance examination.

In 1942, the British Empire had lost Hong Kong, Malaysia and Singapore and was facing a growing threat to Burma, India and Ceylon so much so that a number of Indians left Calcutta. However, Lt Gen (Later Field Marshal) W J Slim, the commander of the Burma Campaign with his leadership, new tactics

and techniques raised the morale of the multinational comrades and reconquered all the territory in Asia from a highly trained well-led, ruthless Japanese enemy. He converted defeat and disaster into a victory. General Slim joined the British Army at the outbreak of the First World War and was transferred to the Indian Army in 1919 and in 1920 to the 1/6th Gorkha in Nepal.

The chapter on "The March on India" is of particular interest to the Indian Army and Navy officers who were engaged in the Burma operations. Contrary to the expectations, the personnel of the Indian Army did not support the Indian National Army organised by Subash Chandra Bose. An incident where a Sikh INA officer made the mistake of approaching an Indian infantry unit to join the INA and was killed in a single combat by another Sikh officer to the thunderous applause of the later's unit, proves the point.

The chapter on "Sacking of Slim" makes a facinating reading by those in higher command. It brings out the undesirable events when Lt Gen Sir Oliver Lease on being appointed C-in-C 11th Army Group and Allied Land Forces South-East Asia, gave orders for removing Slim from the 14th Army. This was done without the approval of Brooks the CIGS who was outraged at Lease's gross neglect of protocol and directed Mountbatten to reinstate Slim as the commander of the 14th Army. A clear case of jealousy and vindictiveness.

A very well researched, informative and interesting book complete with relevant photographs and sketches. It has many untapped source materials, and mentions the diverse character and habits of those in command like Mountbatten, Wingate and Stillwell.

The nine appendices are of particular interest to the readers as these contain a wealth of information. The main ones being the details of Victoria and George Crosses, senior staff and command appointments, outline orders of battle, Infantry regiments of the Indian Army, 1939-1945 and battle casualties. It would be a matter of pride to all Indians that out of 34 Victoria and George Crosses, 20 were awarded to the personnel of the Indian Army.

Recommended reading for all Army officers and a must for all defence libraries.

Commodore R. P. Khanna, IN (Retd)

Negotiating Peace in Sri Lanka: Efforts, Failures and Lessons. *Ed by Dr Kumar Rupesinghe, UK: International Alert, 1998, pp. 420, SL Rs. 450.00, ISBN 955-8085-00-6*

The problem of Tamil militancy in Sri Lanka is now at least a quarter century old. It acquired serious proportions by 1975 when the Mayor of Jaffna, Mr Duraiappah, was assassinated by a relatively unknown Prabhakaran. The LTTE, along with some other Tamil militant groups, was born at this time.

Given the geographical proximity and the emotional empathy of the Indian Tamils, as Indian involvement was inevitable. Finally, in July 1987, the Indian Prime Minister, Mr Rajiv Gandhi, and the Sri Lankan President, Mr Jayewardene, signed the Indo-Sri Lanka Peace Accord, followed by the induction of the IPKF in Sri Lanka. In September 1989, another agreement was signed between the two governments to withdraw the IPKF in Sri Lanka. By March 1990, the IPKF had been fully withdrawn. The controversial and unsuccessful operation resulted in over a thousand IPKF personnel killed, more than twice the number wounded, and a monetary expenditure of over Rs 50 billion. The Tamil problem remained unsolved. Subsequently, Mr. Rajiv Gandhi was assassinated in May 1991, and the Sri Lankan President, Mr Premadasa and the UNP leader and Presidential candidate, Mr. Dissanayake, were assassinated in May 1993 and October 1994 respectively. All of them were central to Indo-Sri Lankan relations and were consequently looked upon as enemies by the LTTE.

International Alert (IA) is an independent non-governmental organisation founded in 1985 and based in London. It aims to work towards the resolution of violent internal conflicts in countries the world over. It started work on the Sri Lankan conflict in 1986 and organised a special conference on the subject in Lucerne in July 1997. The publication under review is a collection of papers presented at that conference.

The authors of the papers represent a wide cross-section of people including many key Indian and Sri Lankan officials who had represented their governments at various peace processes and those involved in implementing the July 1987 Indo-Sri Lankan Peace Accord. Thus the Indian authors include Mr J N Dixit, former head of the Intelligence Bureau and Lt Gen A S Kalkat, Commander of the IPKF. The Sri Lankan perspective is provided by Mr Bernard Tilakaratne, former Foreign Secretary and High Commissioner to India, General Cyril Ranatunge, former Joint Operations Commander and National Security Adviser to the President, and Mr Bradman Werakoon, former International Adviser to President Premadasa, among others. Finally, Mr R Sampanthan, Secretary General of the Tamil United Liberation Front and former Sri Lankan Member of Parliament, who has been involved in negotiations with the Governments of India and Sri Lanka, presents his case as a representative of Sri Lankan Tamils.

For a serious student of the problem, the book is a useful read. Considering their erstwhile official positions, the authors have been fair, frank and forthright in describing the events and expressing their views without attempting too much of self-justification. The origion, history and causes of the Sri Lankan problem, the Indian mediation, overt and covert actions, leading to the 1987 Peace Accord, the Accord itself, consequences of the IPKF operations, post-IPKF Sri Lankan Government-LTTE negotiations till the date of the conference, have all been dealt with exhaustively and lessons learnt logically arrived at. Certain projections of future prospects and recommendations have also been made.

The problem remains unsolved till date and a solution to this problem as well as to a host of other similar ones the world over cannot be found in books. Suffice it to say that books such as this one, can facilitate understanding of problems. Decision-makers can then bear in mind the lessons learnt to pave way for smoother negotiations by avoiding historical pitfalls.

Commodore R N Sharma, IN (Retd)

The Pathans : 550 BC – AD 1957 : with an Epilogue on Russia. *By Olaf Caroe, Karachi : Oxford University Press, 1996, pp.533, Rs. 425.00, ISBN 0 19 577221 0*

This book is a reprint of the original published in Pakistan in 1958. Pathans have been studied in tribal annals, legends; even myth, but this book is a definitive history of the Pathans living in Afghanistan and North Western Frontier Province (NWFP) of Pakistan, from 550 BC to 1957 AD. The various tribes include Afridi, Khatak, Orakzai, Bangash, Wazir, Mahsud, Turi. These hardy tribesmen were originally called Pakhtuns, the Hindi version of which is 'Pathans'. This book narrates the relationship between the Pathans and the Moghuls; Pathans and the Sikhs and Pathans and the British. Well-illustrated and with good maps, the book reinforces the theory that the tough Pathans were not made for the rough land; the rough land was made for the tough Pathans. An interesting historical read.

Lieutenant Colonel Daljit Singh (Retd)

Turkey: Identity, Democracy, Politics. *Ed by Sylvia Kedourie, London: Frank Cass, 1996, pp. 252, £ 25.00, ISBN 0 7146 4718 7*

The book details the emergence of Turkey as a Democratic Republic, its acceptance as a Western Nation, and admission as a full member of NATO in 1952.

The first three papers deal with the early assessment of the development and politics of Turkey upto 1948, the emergence of the state of Israel, the period of the dissolution of the USSR, aftermath of the Cold War and the problems of turmoil in the Caucasus, the partition of Turkey during 1918-20 and the establishment of Britain as a dominant power in the region, Turkey's domestic problems, the role of the press, the urbanisation and the voting pattern. The next five papers deal with the emergence of a powerful press and consolidation of democracy in Turkey, urbanisation and voting for the Turkish Parliament and establishment of an official identity. Journalists have had a big hand in persuading the military to introduce laws and guidelines to preserve the democratic regime. The public was willing to blindly obey orders given by men in uniform. The final three articles are concerned with the moving away of the Kurds to Turkey, Syria and Iraq.

These articles by learned writers are well researched, though there is a repetition of different events making it a bit difficult to understand the narrative. A useful study on the evolution of modern Turkey. A few maps of different areas could have made the text easier to understand.

Brigadier Y P Dev (Retd)

The Call from Algeria: Third Worldism, Revolution, and the Turn to Islam. *By Robert Malley, Berkeley: University of California Press, 1996, pp.323, $ 18.00, ISBN 0-520-20301-1*

Robert Malley's book is on the life-cycle of an idea, that had moral attraction for him as a student of international affairs and as an individual. Therefore, Malley's book on Third Worldism is not only an intellectual exploration, but also a personal bid to understand an ideology that had lent its name to a better part of the post-colonial world. Malley uses Algeria as a case study against which to trace the birth, the times and the displacement of Third Worldism. Thus we see him move chronologically from generality to the particular, in this history of the periphery until the post-Cold War era.

His thesis is that Third Worldism could not fulfill its promise, not only because it promised too much, but also because of systemic constraints. The centralised state controlled economies of the Third World came under pressure from the oil shock of 1973. The petro-dollars this generated for the oil producers, were recycled in Western economies, and were channelled in part to the Third World through West controlled banking institutions leading to the debt trap of the 1980s. To escape this, these states under the advice and pressure of international financing institutions, took to market reforms. The coincidence of economic liberalisation with political democratisation, lead to the shrinking state's abdication of socio-political space, in a time of difficulty, if not crisis. This vacuum was filled with ethnic or religious ideologies, such as Islamism or tribalism. The most acute case of such intra-state contested politico-military space arguably is Algeria.

In short, the book is worth a read, if only for the chapters that deal solely with the predicament which has eliminated the Third World as a grouping. The last part of the book on the 'Turn to Islam' provides a reasonable explanation for the Islamicist ascendance of late, a matter of some interest in our context.

Major Ali Ahmed

Why Syria Goes to War: Thirty Years of Confrontation. *By Fred H Lawson, Ithaca: Cornell University Press, 1996, pp. 222, £ 23.50, ISBN 0-8014-2373-2*

The author has analysed three reasons for Syria going to war with Israel. Firstly, Syria's leadership since November 1970--President Nafiz al-Asad. Secondly, Middle East politics of the USA and the erstwhile Soviet Union.

Lastly, sectarian nature of the regime whose Alawi roots put the government in conflict with Syria's Sunni majority. As per the author, the 1967 Middle East War was instigated by Syria, which resulted in strong Israeli retaliation and capture of Golan Heights by Israel. This book confirms the oft-repeated dictum that in the Middle East, there can be no war without Egypt and no peace without Syria. An interesting and informative book.

Lieutenant Colonel Daljit Singh, (Retd)

Building a Palestinian State : The Incomplete Revolution. *By Glenn E Robinson, Bloomington : Indiana University Press, 1997, pp. 228, £ 45.00, ISBN 0-253-21082-8.*

This well researched and very readable book is an in-depth study of the Palestinian revolution - the Intifada - to set up their own independent State of Palestine. The author starts by tracing how the various powers that ruled Palestine - the Turks, British, Egyptians, Jordanians down to the Israelis - built and encouraged the traditional notable elite, mostly from the rich land-owning class, through whom the occupying power exercised and retained control over the local population. It was in the interest of this elite to maintain the status-quo and in this their interest coincided with that of the occupying power.

The setting up of several Universities in the Gaza Strip and in the West Bank for the first time brought higher education within the reach of the middle and the poorer classes of Palestinians. This new educated elite, challenged the power and position of the traditional elite in order to gain political control. They set out to achieve a mass mobilisation by forging local self-help organisations, the success of which made possible, the popular upsurge - the Intifada - against the harsh Israeli occupation, and sustained it for such a long period of time inspite of the severe Israeli measures to suppress it.

A lot of what is brought out in this book will be familiar to those readers in India, who remember own experiences of the British colonial rule here. To neutralise the new educated elite, the majority of whom belonged to the secular Palestinian Liberation Organisation and the Fatah, the Israelis built up and encouraged the Islamist movement and its militant wing, the Hamas. This move later created a monster over which the Israelis soon lost control - again reminiscent of the events in Punjab leading up to the Bhindranwala fiasco. The author makes an interesting differentiation between the Islamist movement in Palestine and the popular misconception of labelling all such movements under Islamic fundamentalism.

What will probably be new information and somewhat surprising to many Indian readers is the author's description of the extremely harsh, oppressive and unfair measures employed by the Israelis to maintain their rule over the Palestinians and to suppress their movement for independence. It is

strange that the Jewish people, who had themselves suffered so much, should turn out to be equally harsh oppressors when they, in their turn, came to power in Israel.

The author finally traces how the end benefits of the Intifada, though still incomplete, were taken over by the Palestinian Liberation Organisation (PLO) elements who were in Tunis during the revolution and had been able to render only moral support to it. This outside political force, under Yasser Arafat, suppressed the new grassroots democracy's popular institutions, which had made the success of the Intifada possible, and replaced it with its personalised dictatorial rule. The author does, however, quite objectively, give the reasons that a charismatic leader like Arafat needed to adopt such drastic steps to ensure a settlement with Israel. This book will certainly help readers to follow and understand better, the intricacies of the intractable Palestine problem and will undoubtedly be useful for those interested in the serious study of the Middle East.

Major General SC Sinha (Retd)

Vietnam: Anatomy of a Peace. *By Gabriel Kolko, London: Routledge, 1997, pp.190, £ 10.99, ISBN 0-415-15990-3*

So much has been written about the Vietnam War, which lasted 30 years, resulting in Communist victory in 1975 and the defeat of the Americans and their 'Allies'. The heroic deeds of the Vietnamese people against most modern weapons is well documented. The devastation and suffering and the legacy of this war cannot be brushed aside.

Today, Vietnam struggles to improve the lot of its people. The economic problems are numerous. Since 1986, the Communist Party has embarked on rebuilding the war-torn nation. Gabriel Kolko analyses whether the Communist leaders, who conducted the war brilliantly, are managing the transition of economy, from socialist ideology to market forces of capitalism, successfully. The study is well researched and examines the economic programmes and the profound problems thrown up, especially social ones. He comments on the inability of the Vietnamese Government to deal with the contradictions - between daily realities and their original aims and perhaps the communists are close to losing the 'peace'.

For policy makers, in matters economic and for students, this research work will be beneficial. The book is recommended to the general reader, as well.

Major General Ram Nath (Retd)

The Soviet Union and the Vietnam War. *By Ilya V Gaiduk,Chicago: Ivan R Dee, 1996, pp. 299, $28.50, ISBN 1-56663-103-3*

The author is a Russian historian who had access to former secret documents in the archives that were only briefly opened. He was able to focus on the trends and matters that had influenced Kremlin in its decision making process, its relations with China and the West – the USA in particular. Gaiduk in his book attempts to supplement the impressive historiography of the Vietnam War from the other side of the front-line.

President Johnson's sincere effort to a negotiated settlement to prevent North Vietnam taking on South Vietnam were conveyed though the Prime Ministers of India and Pakistan with no result. Soviet policy during the Vietnam War had three dimensions. First, Moscow decided that within limits Hanoi would be provided with all military and economic assistance needed to pursue the war. Second, the USSR would not sacrifice the strategy of detente in its relations with the West but instead would adjust Vietnam's policy to this course if and when necessary. Third, Moscow would place greater emphasis on a negotiated settlement as the Soviet leaders did not believe in the ultimate victory of North Vietnam in the War and so sending volunteers to Vietnam was not considered practical.

China made all efforts to outdo USSR to gain greater influence with North Vietnam but to no avail; Moscow always had the upper hand. On the other hand, USA was more concerned with Sino-Soviet alliance than the deteriorating Soviet - American relations. Although Hanoi lost fifty thousand of its best military cadres, courtesy massive bombing raids viz US hardline, it all proved futile. Now Nixon sought a fair, negotiated settlement. Soviet Union decided to help the USA to honourably extricate itself from the war and thus win sympathy from the national liberation movement as a defender of the rights of the oppressed people. Blended by this built up over – confidence the former got involved in Africa, Middle East and later Afghanistan which became one of the reasons for the collapse of the Soviet Union. A peace agreement was signed in Paris in January 1973, a venue acceptable to Hanoi and Washington because of their faith in General De-Gaulle but the war between North and South Vietnam carried on for two more years; the only winners were the North Vietnamese; neither the USA, China nor USSR were able to exercise complete hegemony over them.

A useful book for the Military to understand both sides of the Vietnam War.

Brigadier Y P Dev (Retd)

Denial and Jeopardy: Deterring Iranian Use of NBC Weapons. *By Paula A DeSutter, Center for Counterproliferation Research, Washington D.C: National Defense University Press, 1997, pp. 131, ISBN 1-57906-003-X*

The research paper by Paula DeSutter is a part of counterproliferation

research to identify regions requiring enhanced deterrence to deter Iran's use of nuclear, biological and chemical (NBC) weapons. The book is an excellent example of brevity and clarity of approach, put across in a sharply focussed manner. It begins with an outline of the concept of regional deterrence, an analysis of Shiaism and goes on to provide an overview of Iranian Revolutionary Guards - their strength, ideology and role in weapons procurement. Thereafter, the book covers the Iranian national objectives, NBC policy, employment strategy, doctrine and scenario. The paper concludes by means of deterring Iran by the USA.

Some of the interesting facets of the study are the identification of the centres of gravity and targeting them; and the import of the cult of martyrdom and death associated with Shiaism. Her assessment is that Iranian leaders have defined themselves by their opposition to the United States. They perceive their confrontation with the USA as a key source of respect and support from other Islamic states. It is also possible for Iran to conclude that there are adequate incentives to provoke USA and Israel to strike first, thus necessitating its NBC response. She recommends that highest priority be placed by the USA on deterring and defending against Iranian NBC use.

The paper is very well researched and aptly illustrated with an exhaustive bibliography. It must be read widely, not only to enable similar analysis in respect of our potential threats, but also to clearly understand how others may be assessing us and taking postures against us.

Captain S Kulshrestha

The Austro-Prussian War : Austria's War with Prussia and Italy in 1866. *By Geoffrey Wawro, UK : Cambridge University Press, 1996, pp. 313, £ 40.00, ISBN 0-521-56059-4 (Hb)*

The author who is presently teaching history at Oakland University, Michigan has done extensive research in the political and military archives of Austria, France, Germany, Italy and England and subsequently reconstructed the Austrian campaign, blow by blow, with details of all major battles.

In 1866, Austrian Empire was a mighty one. It was attacked by the Armies of Prussia and Italy. The Prussians, with well executed flanking attacks, first overran Austria's German Allies and subsequently thrust into Austria itself. At the same time, the Italians engaged the Austrian southern Armies, but did not meet with the same success. Caught between two pincers, the Austrian Armies collapsed after the battle of Koniggratz on 3 July 1866. Thus emerged two new great powers and Austria was consigned forever to the fringes of European power. The book brings out the reasons for the defeat of Austria and reveals how a pre-war celebrity, General L Benedec and his deputies mishandled key strategic advantages and finally lost the war.

Students of military history will find the book very interesting. It is well illustrated with maps, sketches and photographs.

Major General Ram Nath (Retd)

The Enigma of General Blaskowitz. *By Richard Giziowski, London: Leo Cooper, 1997, pp. 532, £ 25.00, ISBN 0-85052-554-3*

World War II has inspired so many to author the events of this epic War; autobiographies, biographies, description of famous battles/theatres, have been written extensively, mostly by writers of 'allied countries' for obvious reasons.

Going through these books, one gets the impression, that the American and British Generals, were real professionals, with good human values, whereas, the German and Japanese Generals were not of the same calibre and that their personal qualities left much to be desired. Whereas Patton who beat soldiers was a hero, Rundstedt is belittled because of his habit of excessive smoking. Differences between Montgomery and American commanders over *Operation Overlord* is viewed as a positive development (standing up to one's conviction and so on); the differences between Rundstedt and Rommel on the strategy for the defence of Europe in 1944, on the other hand, amounts to unnecessary bickering, confusion and poor leadership.

This is a well researched book on the life of General Blaskowitz and adds to the wealth of material on German leadership. This less known German General did not get the 'quodos' he deserved because he disapproved the atrocities committed on innocent people and hence fell out of favour with Hitler. Unfortunately some of the factual information is a repetition. Nevertheless, the behind-the-scene happenings of German high command makes for interesting reading.

Students of military history will find the book useful. The list of references and pictures, enhance the value of the book.

Major General Ram Nath (Retd)

Man without a Face : The Autobiography of Communism's Greatest Spymaster. *By Markus Wolf with Anne McElvoy, London : Jonathan Cape, 1997, pp. 367, £ 17.99, ISBN 0-224-4498-2.*

This is the autobiography of Communism's greatest spy master Marcus Wolf. He was the head of East Germany's Foreign Intelligence Service, STASI. The autobiography has been written in a fairly organised and candid manner and is very readable. The author has been assisted by Anne McElvoy, the deputy editor of the *The Spectator.* The author's observation in the introduction to the book, that any history worthy of the name cannot be written only by the

winners, is a valid point. The book narrates the attempts of the Americans and Israelis to win over Marcus Wolf, with the Russians having politely dumped him after the unification of Germany. He declined to betray his colleagues and lived to face trial in Germany.

In 1952, when he was not even 30 years of age he was asked to take over the Foreign Intelligence Service. He reorganised the operations and infiltrated research organisations and companies at various levels in West Germany. From winning, dining and providing pleasure houses to important western visitors, to sending Romeos to attract and enlist secretaries to VVIPs, became normal practice. He achieved outstanding success in his activities by spying on Chancellor Willy Brandt, using Guillaume. Marcus Wolf clearly highlights the difficulties and pitfalls he had to face and the lessons learnt that enabled him to better his web of spies. In his judgement, East Germany could not have survived and no amount of expertise in planning, diplomacy or darker arts of espionage could have prevented the collapse of the wall. The book has all the important ingredients of a spy thriller and above all, is replete with truthful introspection.

A book that must be read.

Captain S Kulshrestha

The Supermen: The Story of Seymour Cray and the Technical Wizards Behind the Supercomputer. *By Charles J. Murray, New York : John Wiley & Sons, Inc., 1997, pp.232, $ 24.95 (USA), $34.95 (CAN) ISBN 0-471-04885-2*

Developments in the computer field have been so mind-boggling that any book on this subject is bound to find a ready audience. In this field the super computer holds a special place and has fascinated the world. For most part the very word "super computer" invokes the name and image of Seymour Cray. This book is about that man and some of the others who brought about the most important developments in the supercomputer world.

The book portrays one man's dedication to computer speed that made the supercomputer possible. It is also the story of an industry that has played an important role in bringing information technology to where it is today. The genius of Cray, his always being ready to start from scratch by literally "burning his boats" and creating an environment where his facility came to be regarded as an "Engineers paradise" make for awe inspiring reading. Here is a top man of the Company soldiering contacts on the circuit board by himself as a matter of course.

The book also narrates how Government bureaucrats link their personal achievement and status to the acquisition of bigger and faster machines by their departments. The book needs to be read if only to make our tax paying public realise that money appropriated for laudable if nebulous causes are often a terrible waste and greater accountability needs to be insisted upon.

It is also the story of struggles of a frontier technology with the Governments that must always need finance for its projects well before their commercial viability can be ascertained and with management whose goals must, of necessity, at some stage or the other be different from those of the scientists and engineers who are actually making the projects their life achievement. The book also highlights how the real work gets done when the motivation is there. Facilities and perks then are of lesser significance.

The development of the supercomputer industry and the ultimate shifts in emphasis from raw engineering goals to goals more concerned with the bottom-line are brought out in a manner that almost makes it an eminently readable case study while yet retaining its appeal to the general reader. The personal side of Seymour Cray's life add a touch that greatly increases the interest ingredient without detracting from the essential integrity of the book.

The book is recommended for reading by our scientific community and for the Science and Technology shelves of High School, College and training institution libraries.

Colonel A K Chawla

Cybertrends: Chaos, Power, and Accountability in the information Age. *By David Brown, London: Viking-Penguin Books, 1997, pp. 280, £8.99 ISBN 0-14-024673-8*

This book is the maiden attempt of David Brown, a correspondent for the *Financial Times* and the *International Tribune.*

The book is replete with modern similies and classical references that impart a lay reader an easy understanding of this sometimes complex and unfamiliar subject. The book is structured into ten chapters with interesting titles like Castles and Abbeys, Masters of Code, Remote Control, Sandcastles etc. The author has brought out certain very valid aspects that need to be considered by the global society for the Information Technology (IT) revolution is spreading across continents at an unbelievable pace.

The author states that the challenges posed by the info-age is not that of means of control but of maintaining creative diversity and cultivating associated values with wide consensus. He feels that it is unlikely that cybernetic technology will relegate large organisations into oblivion; it will simply break them into less visibly related nodes. The challenges are to configure a new system of political checks and balances to equalise access to unlimited opportunities, and to ensure that these are pursued within socially accountable regime. The electronic connectivity between individuals may not be able to replace the human element; similarly a disconnection may not mean the same on the plateau of relationships. These issues would have to be worked out or redefined in the new order of a digitalised society.

The book is very well researched and thought provoking but is not very easy to read. It would be of interest to a serious student of social science.

Capt S. Kulshrestha

Additions to the USI Library for the quarter-ending December 1998

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

S.No.	Author's Name	Title	Year
		Afghanistan	
1.	Maley, William (ed)	Fundamentalism Reborn?: Afghanistan and the Taliban, *London : Hurst & Company Ltd, pp. 253, Rs. 795.00 ISBN 1-85065-360-7*	1998
2.	Grau, Lester W (ed)	The Bear Went Over the Mountain: Soviet Combat Tactics in Afghanistan, *London: Frank Cass Publishers, pp. 220, Rs. 1,265.00 ISBN 0-7146-4413-7*	1998
		Air Force - India	
3.	Singh, Ranbir (Gp Capt)	Indian Air Force: In the Footsteps of Our Legends, *Noida: Book Mates Publishers, pp. 264, Rs. 390.00 ISBN 81-900746-4-4*	1998
		Army - Leadership	
4.	Singh, K Kuldip (Brig)	Overcoming Crisis in Leadership : Indian Army, *Delhi : Manas Publications, pp. 295, Rs. 595.00 ISBN 81-7049-096-0*	1998
		Autobiography	
5.	Dayal, Rajeshwar	A Life of Our Times, *New Delhi: Orient Longman Limited, pp. 637, Rs. 495.00 ISBN 81-250-1546-9*	*1998*

6.	Dixit, JN	My South Block Years: Memoirs of a Foreign Secretary, *New Delhi : UBS Publishers' Distributors Ltd., pp. 485, Rs. 395.00 ISBN 81-7476-132-2*	1996
		Biography/Autobiography	
7.	Arora, Ramesh K (ed)	IPS Impressions, *Jaipur : RBSA Publishers, pp. 174, Rs. 340.00 ISBN81-7611-011-4*	*1997*
8.	Gajrani, S (ed)	Contemporary Political Leadership in India : Farooq Abdullah - Chief Minister of Jammu and Kashmir *New Delhi : APH Publishing Corporation, pp. 223, Rs. 500.00 ISBN 81-7024-986-4*	1998
9.	Bakshi, S R (et al)	Contemporary Political Leadership in India: George Fernandes - Defence Minister of India, *New Delhi: APH Publishing Corporation, pp. 334, Rs. 500.00 ISBN 81-7024-999-6*	1998
10.	Bhandari, Romesh	As I Saw It, *New Delhi: Har-Anand Publications Pvt. Ltd., pp. 326, Rs. 495.00 ISBN 81-241-0076-4*	1998
11.	Bakshi, S R (et al)	Contemporary Political Leadership in India: Sonia Gandhi: The President of AICC, *New Delhi: APH Publishing Corporation, pp. 196, Rs. 500.00 ISBN81-7024-988-0*	1998
		British History	
12.	Canny, Nicholas (ed)	The Oxford History of the British Empire: The Origins of Empire: British Overseas Enterprise to the Close of the Seventeenth Century (Volume I), *New York : Oxford University Press, pp. 533, Rs. 1,845,00. ISBN0-19-820562-7*	1998

Central Asia-History

13. Rahul, Ram — Central Asia: An Outline History, *New Delhi: Concept Publishing Company, pp. 170, Rs.275.00 ISBN 81-7022-679-I (Hb)* — *1997*

China - Military

14. Shambaugh, David and Yang, Richard H — China's Military in Transition, *Oxford: Clarendon Press, pp. 366, £ 16.99 ISBN 0-19-829261-9* — 1997

Crime - Analysis

15. Mishra, Girish and Pandey, Braj Kumar — White-Collar Crimes, *New Delhi: Gyan Publishing House, pp. 426, Rs. 540.00 ISBN 81-212-0590-5* — *1998*

Defence Year book

16. Jasbir Singh, RK (Lt Gen) (ed) — Indian Defence Year Book 1998-99, *New Delhi : Natraj, pp. 615, Rs. 950.00 ISBN 81-86857-01-X* — 1998

Development - Society

17. Chandra, Snehlata (ed) — Marginal Communities and Social Development, *New Delhi: Kanishka Publishers Distributors, pp. 329, Rs. 495.00 ISBN 81-7391-245-9* — 1998

Development - Women

18. Rana, Kranti (ed) — Modern Working Women and The Debate, *New Delhi: Kanishka Publishers Distributors, pp. 304, Rs. 495.00 ISBN 81-7391-248-3* — 1998

East Asia- History

19. Fairbank, John K et al — East Asia: Tradition & Transformation A History of China and Japan (Revised Edition), *Delhi: Worldview Publications, pp. 1027, Rs. 895.00* *ISBN 81-86423-16-8* — 1998

East Asia- Politics

20. Zhao, Suisheng — Power Competition in East Asia: From the Old Chinese World Order to Post-Cold War Regional Multipolarity, *London : Macmillan Press Ltd., pp. 346, Rs. 1,083.00* *ISBN 0-333-73120-4* — 1998

Environment - India/Bangladesh

21. Gaan, Narottam — Environmental Degradation and Conflict : Case of Bangladesh-India, *New Delhi South Asian Publishers, pp. 161, Rs. 250.00* *ISBN 81-7003-219-9* — 1998

Ethnicity

22. Palanithurai, G and Thandavan, R (eds) — Ethnic Movement in Transition: Ideology and Culture in a Changing Society, *New Delhi: Kanishka Publishers Distributors, pp. 232, Rs. 395.00* *ISBN 81-7391-247-5* — 1998

Foreign Policy - India/China

23. Mansingh, Surjit (ed) — Indian and Chinese Foreign Policies in Comparative Perspective, *New Delhi: Radiant Publishers, pp. 530, Rs. 650.00* *ISBN 81-7027-220-3* — 1998

Future Warfare

24. Marshall, S L A (Col) — Men Against Fire: The Problem of Battle Command in Future War, *Dehra Dun: Natraj Publishers, pp. 215, Rs. 250.00* *ISBN 81-85019-68-1* — 1997

History - Indo-Portuguese

25.	Shirodkar, PP	Researches in Indo-Portuguese History (Vol 1 & 2), *Jaipur: Publication Scheme, pp. 258 (Vol I), pp. 238 (Vol II), Rs.2000.00 (set) ISBN 81-86782-15-X(set)*	1998

Human Rights

26.	Jaswal, Paramjit S and Jaswal, Nishtha	Human Rights and the Law, *New Delhi: APH Publishing Corporation, pp. 395, Rs. 600.00 ISBN 81-7024-729-2*	1996

Human Rights-Women

27.	Human Rights Watch Women's Rights Project	The Human Rights Watch : Global Report on Women's Human Rights, *Delhi: Oxford University* Press, pp. 458, Rs. 595.00 ISBN 0 19 564292 9	1998

India - Critical Analysis

28.	Chatterjee, Partha	A Possible India: Essays in Political Criticism, *Delhi: Oxford University Press, pp. 301, Rs. 200.00 ISBN 0 19 564766 1*	1998

India - Foreign Policy

29.	Mansingh, Lalit, et al (eds)	Indian Foreign Policy: Agenda for the 21st Century (Vol 2), *Delhi: Konark Publishers Pvt. Ltd., pp. 363, Rs. 450.00 ISBN 81-220-0517-9*	1998

India - Future

30.	Kalam, APJ Abdul and Rajan YS	India 2020: A Vision for the New Millennium, *New Delhi: Viking, pp. 312, Rs. 395.00 ISBN 0-670-88271-2*	1998

India - Governance

31. Waslekar, Sundeep — Dharma Rajya: Path-breaking Reforms for India's Governance, *Delhi: Konark Publishers Pvt. Ltd, pp. 208, Rs. 250.00 ISBN 81-220-0528-4* — 1998

India-Independence

32. Tremblay, Reeta Chowdhari et al (eds) — Interfacing Nations: Indo/Pakistani/Canadian Reflections on the 50th Anniversary of India's Independence, *Delhi: B.R. Publishing Corporation, pp. 501, Rs. 750.00 ISBN 81-7646-034-6* — 1998

India - Partition

33. Kamal, K L — India After Independece: The Great Betrayal (A Novel), *Jaipur: RBSA Publishers, pp. 101, Rs. 250.00 ISBN 81-7611-021-3* — 1998

34. Bhatt, S C — The Great Divide: Muslim Separatism and Partition, *New Delhi: Gyan Publishing House, pp. 296, Rs. 450.00 ISBN 81-212-0591-3* — 1998

India - Politics

35. Chatterjee, Partha (ed) — State and Politics in India, *Delhi: Oxford University Press, pp. 576, Rs. 250.00 ISBN 0 19 564765 3* — 1998

India - Society

36. Guha, Biswajeet (ed) — Conflict and Violence in Indian Society, *New Delhi: Kanishka Publishers Distributors, pp. 323, Rs. 550.00 ISBN 81-7391-260-2* — 1998

Indian Ocean - Bibliography

37. Rao, P V (ed) — Indian Ocean: An Annotated Bibliography, *Delhi : Kalinga Publication, pp. 154, Rs. 350.00 ISBN 81-85163-90-1* — 1998

Indian States - Rajasthan

38. Singh, K S (ed) — People of India: Rajasthan (Volume XXXVIII Two Parts), *Mumbai: Popular Prakashan Pvt. Ltd., pp. 1,056, Rs. 800.00 ISBN 81-7154-769-9* — 1998

Internal Security - Policing

39. Vadackumchery, James — Policing the Largest Democracy : 50 Years and After, *New Delhi : APH Publishing Corporation, pp. 215, Rs. 400.00 ISBN 81-7024-979-1* — 1998

International Security

40. Klare, Michael T and Chandrani, Yogesh — World Security: Challengs for a New Century (Third Edition), *New York: St. Martin's Press Inc, pp. 418, Rs. 1,228.00 ISBN 0-312-14990-5* — 1998

Kashmir

41. Singh, K Brahma (Major) — British Diplomacy in Kashmir, *New Delhi: Reliance Publishing House, pp. 328, Rs. 350.00 ISBN 81-7510-070-2* — 1998

42. Nath, Birbal — Kashmir: The Nuclear Flashpoint, *New Delhi: Manas Publications, pp. 242, Rs. 595 ISBN 81-7049-097-9* — 1998

43. Khan, Akbar — Raiders in Kashmir, *Delhi: Army Publishers, pp. 210, Rs. 150.00*

Ladakh

44.	Rizvi, Janet	Ladakh: Crossroads of High Asia (Second Edition), *Delhi: Oxford University Press, pp. 290.00, Rs. 250.00 ISBN 0 19 564546 4*	1998

Library Science

45.	Ramaiah, L S	Images and Perceptions in Library and Information Science, *New Delhi: Ess Ess Publications, pp. 203, Rs. 500.00 ISBN 81-7000-239-7*	1998

Low Intensity Conflict

46.	Chadha, Vivek (Maj)	Company Commander in Low Intensity Conflict: Principles, Preparation and Conduct, *New Delhi: Lancer Publishers, pp. 231, Rs. 395.00 ISBN 1 897829 29 9*	1997

Mass Media

47.	Kumar, Arvind (ed)	Encyclopaedia of Mass Media and Communication (Vol 4): The Print and Other Folk Media, *New Delhi: Anmol Publications P.vt.Ltd., pp. 388, Rs. 6000.00 (4 Vols) ISBN 81-261-0029-X (set)*	1998

Military Anecdotes

48.	Hastings, Max (ed)	The Oxford Book of Military Anecdotes, *Oxford : Oxford University Press, pp. 514, £ 8.99 ISBN 0-19-214174-0*	1987

Military History

49.	Otte, TG and Pagedas, Constantine A (eds)	Personalities, War and Diplomacy: Essays in International History, *London: Frank Cass Publishers, pp. 291, Rs. 2,855.00 ISBN 0 7146 4818 3*	1997

Nation-Identity

50. Hasan, Mushirul (ed) — Islam, Communities and the Nation: Muslim Identities in South Asia and Beyond, *New Delhi: Manohar Publishers & Distributors, pp. 530, Rs. 750.00* *ISBN 81-7304-070-2* — 1998

National Integration

51. Abdulrahim, P Vijapur et al — Pluralism, Minorities, National Integration: Problems and Prospects, *New Delhi: South Asian Publishers, pp. 189, Rs. 260.00* *ISBN 81-7003-212-1* — 1997

Police - Functions

52. Vadackumchery, James — Police Interrogation: (DOs which the police do not DO), *New Delhi: APH Publishing Corporation, pp. 166, Rs. 400.00* *ISBN 81-7024-974-0* — 1998

Political Theory - Democracy

53. Mahajan, Gurpreet (ed) — Democracy, Difference and Social Justice, *New Delhi: Oxford University Press, pp. 584, Rs. 695.00* *ISBN 0 19 564152 3* — 1998

Punjab

54. Grewal, J S and Banga, Indu (eds) — Punjab in Prosperity and Violence: Administration, Politics and Social Change 1947-1997, *Chandigarh: Institute of Punjab Studies, pp. 250, Rs. 450.00* *ISBN 81-86912-01-0* — 1998

Reference Books

55. Haq, Mahbub ul and Haq, Khadija — Human Development in South Asia 1998, *Karachi : Oxford University Press, pp. 189, Rs. 350.00* *ISBN 0-19-577942-8* — 1998

56. Chopra, P N (ed) — The Collected Works of Sardar Vallabhbhai Patel (Vol XIII), (1 January 1948 - 31 December 1948), *Delhi : Konark Publishers Pvt. Ltd., pp. 380, Rs. 500.00 ISBN 81-220-0520-9* — 1998

Research - India-United States

57. Elder, Joseph W, et al (eds) — India's Worlds and U.S. Scholars 1947-1997, *New Delhi: Manohar Publishers & Distributors, pp. 608, Rs. 750.00 ISBN 81-7304-235-7* — 1998

Self Defence-India, Australia and England

58. Yeo, Stanley — Unrestrained Killings and the Law: A Comparative Analysis of the Laws of Provocation and Excessive Self - Defence in India, England and Australia, *Delhi: Oxford University Press, pp. 210, Rs. 345.00 ISBN 0 19 564400 X* — 1998

Sino-Indian Border Dispute

59. Sali, M L — India-China Border Dispute - A Case Study of the Eastern Sector, *New Delhi : APH Publishing Corporation, pp. 313, Rs. 700.00 ISBN 81-7024-964-3* — 1998

Social Security Schemes - India

60. Subrahmanya, RKA — India: 50 Years of Independence: 1947-97: Status, Growth & Development (Vol 12): Social Security- A Critical Survey, *Delhi: BR Publishing Corporation, pp. 254, Rs. 300.00 ISBN81-7018-992-6* — 1998

South Asia - Migration

61. Bose, Tapan K and Manchanda, Rita (eds) — State, Citizens and Outsiders: The Uprooted Peoples of South Asia, *Kathmandu: South Asia Forum for Human Rights, pp. 380, Rs. 550.00* — 1997

South Asia - Politics

62. Prajapati, Vishnu (ed) — South Asia: Power and Politics: Studies in Political Identity and Regional Resurgence - South Asia: Poiitical Priorities and Economic Impreratives (Vol 3), *New Delhi: Commonwealth Publishers, pp. 277, Rs. 1,800.00 (set of 3 Vols) ISBN 81-7169-509-4 (set)* — 1998

South/South East Asia - Analysis

63. Vohra, N N and Dixit, J N (eds) — Religion, Politics and Society in South and Southeast Asia, *Delhi: Konark Publishers Pvt. Ltd. in association with IIC, pp. 281, Rs. 350.00 ISBN 81-220-0529-2* — 1998

State Federalism - Analysis

64. Azam, Kousar J (ed) — Federalism and Good Governance: Issues Across Cultures, *New Delhi: South Asian Publishers, pp. 289, Rs. 400.00 ISBN 81-7003-230-X* — 1998

State Politics - India

65. Kumar, BB — Small States Syndrome in India, *New Delhi: Concept Publishing Company, pp. 184, Rs. 250.00 ISBN 81-7022-691-0* — 1998

US - India - Pakistan

66. Alam, Aftab — U.S. Policy Towards South Asia: Special Reference to Indo-Pak Relations, *Delhi: Raj Publications, pp. 210, Rs. 350.00 ISBN 81-86208-08-9* — 1998

War Trauma - Sri Lankan Tamils

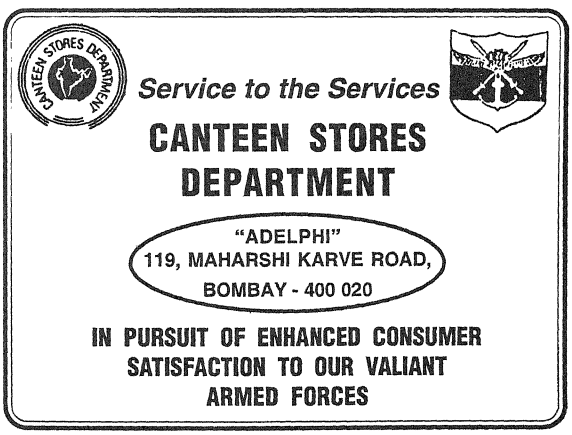
67. Somasundaram, Daya — Scarred Minds: The Psychological Impact of War on Sri Lankan Tamils, *New Delhi : Sage Publications, pp. 352, Rs. 425.00 ISBN 81-7036-725-5* — 1998

Women Law - India

68. Mukherjee, Roma — Women, Law and Free Legal Aid in India, *New Delhi: Deep & Deep Publications Pvt. Ltd., pp. 359, Rs. 650.00 ISBN 81-7629-098-X* — 1998

Trade Organisation

69. Bhandari, Surendra — World Trade Organisation (WTO) and Developing Contries: Diplomacy to Rules Based System, *New Delhi: Deep & Deep Publications Pvt. Ltd., pp. 518, Rs. 880.00 ISBN 81-7629-099-8*



USI Correspondence Courses

Courses	Tuition Fees		
	Course commencement	All subjects (Rs.)	Each subject (Rs.)
1. DSSC Entrance Examination (Army)	Nov 98	1200	275
2. DSSC Entrance Examination (Navy)	Dec 98	350	—
3. DSSC Entrance Examination (Air)	Jan 99	600	325
4. TSC Entrance Examination	Nov 98	750	275
5. Promotion Examination Part D	Jun 99	1000	225
6. Promotion Examination Part B	Sep 98	600	175

USI CONTACT PROGRAMME FOR DSSC (ARMY) STUDENTS

For subscribers of our correspondence course, we propose to conduct a contact programme for the DSSC (Army) Entrance Examination, at the USI from 28 June to 3 July 1999.

For further information please contact Chief Instructor, USI.

*Membership of the USI is compulsory for all Courses. The fees given above do not include membership fees.

Membership Fees

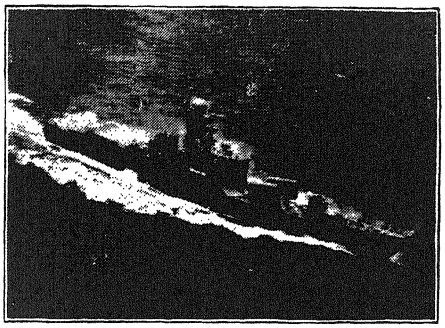
	Entrance	*Subscription*	*Total*
Life Membership			
(a) Defence Personnel	Rs. 1000/-	Rs. 4000/-	Rs. 5000/-
(b) Entitled Civilians	Rs. 1000/-	Rs. 6000/-	Rs. 7000/-
Ordinary Membership			
(a) Defence Personnel	Rs. 300/-	Rs. 300/- (Annual -01 Apr to 31 Mar)	Rs. 600/-
(b) Entitled Civilians	Rs. 300/-	Rs. 450/- (Annual -01 Apr to 31 Mar)	Rs. 750/-

Please obtain membership form from the USI.

Bank Drafts/Postal Orders and Local Cheques ONLY will be accepted.
(These may be made out in the name of Director USI)

UNITED SERVICE INSTITUTION OF INDIA
Rao Tula Ram Marg, (opposite Signals Enclave)
Post Bag No 8, Vasant Vihar PO, New Delhi - 110057

Setting quality standards in shipbuilding



Garden Reach Shipbuilders & Engineers Ltd., GRSE in short, started its operations way back in 1884. From the very beginning the Company has been driven by one abiding passion – quest for excellence.

Today, the same passion for excellence acts as a beacon in all our activities – be it building or repairing high-tech, modern warships and sophisticated commercial vessels or manufacturing shipdeck machinery or diesel engines for marine propulsion and power generation. It extends to portable steel bridges for difficult terrains and vehicle recovery equipment, to ploughs for marine clearance, agro pumps and bulk material handling systems.

GRSE's high quality is also evident from the fact that its Ranchi Diesel Engine Plant, Taratolla Deck Machinery Unit and Bailey Bridge Division have all won the coveted ISO 9000 certification.

At GRSE, whatever we do, excellence comes first. Always.

Garden Reach Shipbuilders & Engineers Ltd.
(A Government of India Undertaking)
43/46, Garden Reach Road, Calcutta 700 024
Phone : 469-8100, Telex : 021-8514/8556, Fax : (033) 469-8150/8144

TCP/GRSE/87

OVER A CENTURY OF EXCELLENCE

S-16	Challenges to India's National Interests in 1995-2010 and Indian Response	Price: Rs. 75.00
S-17	Non-Military Threats to Security in South Asia	Price: Rs.100.00
S-18	Impact of Decreased Defence Spending on the Indian Armed Forces	Price: Rs.100.00
S-19	Security Concerns in Asia in the Early 21st Century, Global Disarmament and the Indian Ocean Rim	Price: Rs.100.00
S-20	The Challenges to India's Foreign and Defence Policies in the Transformed International Power Equations	Price: Rs.100.00

USI NATIONAL SECURITY LECTURES

L-1	India's Problems of National Security in the Seventies by General JN Chaudhuri (Retd)	Price: Rs. 50.00
L-2	India's Defence Policy and Organisation Since Independence by Shri PVR Rao, ICS (Retd)	Price: Rs. 50.00
L-3	Some Problems of India's Defence by Air Chief Marshal PC Lal, DFC (Retd)	Price: Rs. 50.00
L-4	Defence and Development by Shri HC Sarin, ICS (Retd)	Price: Rs. 50.00
L-5	The Indian Ocean & India's Maritime Security by Admiral SN Kohli, PVSM (Retd)	Price: Rs. 50.00
L-7	Internal Threats and National Security by Shri Govind Narain, ICS (Retd)	Price: Rs. 50.00
L-8	National Security and Modern Technology by Dr Raja Ramanna	Price: Rs. 50.00
L-9	India, Pakistan and the USA by Shri S Nihal Singh	Price: Rs. 50.00
L-10	Higher Defence Organisation by Lt. Gen S K Sinha, PVSM (Retd)	Price: Rs. 50.00
L-12	The World Power Structure in Transition by General K Sundarji PVSM (Retd)	Price: Rs. 50.00
L-13	Threats to National Security Due to Internal Problems by General V N Sharma PVSM, AVSM (Retd)	Price: Rs. 75.00
L-14	Affordable Defence in the 1990s by Abid Hussain	Price: Rs. 50.00
L-16	Combating Technology Control Regime by Dr APJ Abdul Kalam	Price: Rs. 75.00
L-17	The Genesis of the Insurgency in Jammu and Kashmir, and in the North East, and Future Prospects by General K V Krishna Rao, PVSM (Retd)	Price: Rs. 75.00

USI RESEARCH PAPER **No.1/97**

1/97	Shape and Size of the Indian Navy in the Early Twenty First Century by Vice Adm R B Suri, PVSM, AVSM, VSM (Retd)	Price: Rs. 75.00

USI JOURNAL CENTENARY NUMBER (OCT-DEC 1970)

Contains informative and authoritative articles Price: Rs. 50.00
(Postage & Packing extra)

Ask for your copy from:

DIRECTOR, UNITED SERVICE INSTITUTION OF INDIA

Rao Tula Ram Marg, (opposite Signals Enclave)
Post Bag No 8, Vasant Vihar PO, New Delhi-110057

OUR ACTIVITIES

Library and Reading Room

The library holds over 50,000 books, and journals, including some books of 17th, 18th and 19th centuries, on an astonishing variety of subjects. While the principal emphasis is on strategy and defence, there are a large number of works on different vistas of Indian life. There are memoirs, biographies, recollections, diaries, journals, manuscripts for scholars and researchers. The reading room is air-conditioned, spacious and well stocked in terms of current reading material.

Correspondence Courses

The Institution runs regular correspondence courses for officers of the Armed Forces to assist them in preparing for promotion examinations, and for the entrance examinations to the Defence Services Staff College and Technical Staff College. Over the years, this has been a significant and well-received activity.

USI Journal

The USI Journal is the oldest surviving defence journal in the country and in Asia, having first appeared in 1871. It is supplied free to all members, and in an era when there is a feeling that free expression of views by Defence personnel is not looked upon kindly by the establishment, the Journal in fact provides just such a forum, without regard to seniority and length of service in the Armed Forces, subject of course, to propriety and quality of the written work.

Centre for Research

A Centre for Research has been established to enable nominated scholars to undertake comprehensive study of selected subjects of topical interest on national security matters.

Gold Medal Essay Competitions

Every year the Institution organises two gold medal essay competitions: one for Officers below 10 years of service and the other for all members. These essays, the first one of which was introduced in 1871, constitute a barometer of opinion on matters that affect national security in general and the defence forces in particular.

Lectures and Discussions

A series of lectures and discussions on service matters, 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 to Armed Forces personnel for valuable reconnaissance and adventure activity they may have undertaken.

MEMBERSHIP

1. All classes of membership except temporary membership and membership of Service Officers applying for Correspondence Courses being conducted by the USI, will be subject to approval by the Executive Committee. The following are ordinarily eligible to become members of the Institution, with full voting rights :-

   (a) Officers of the Armed Forces.
   (b) Class I Gazetted Officers of the Central Services associated with the field of Defence (IAS, IFS, IPS).
   (c) Any category mentioned in sub-paras (a) and (b) above will be eligible even though retired or released from the Service.
   (d) Cadets from the NDA and Cadets from the Service Academies and Midshipmen.

2. Persons entitled to membership, may become Life Members on payment of the subscription laid down from time to time. Cadets from the NDA and other Service Academies can do so only on commissioning.

For further particulars, please write to Director, USI of India, Rao Tula Ram Marg, (opposite Signals Enclave) Post Bag No 8, Vasant Vihar PO, New Delhi-110057

Printed by Manish Comprint, New Delhi - 110 015 Phone : 5103066