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PRINCIPAL CONTENTS

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Lt Gen SK Sinha

China's Policies and Postures
after Mao

Maharaj K Chopra

Need for Closer Tri-Service
Integration and Validity of the
Integrated Theatre Concept
for the Indian Armed Forces

Sqn Ldr NK Bhasin

Modern Arms for Defence
Forces-III Surface to Air
Systems

Dr SS Srivastava

Resurgence of Afloat Air

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APRIL - JUNE 1979

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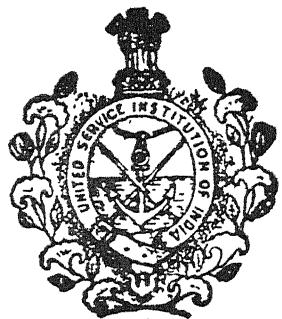
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CONTENTS

APRIL-JUNE 1979

ARMY AND POLITICS IN INDIA	Lt Gen SK Sinha, PVSM	115
CHINA'S POLICIES AND POSTURES AFTER MAO	Maharaj K Chopra	122
NEED FOR CLOSER TRI-SERVICE INTEGRATION AND VALIDITY OF THE INTEGRATED THEATRE CONCEPT FOR THE INDIAN ARMED FORCES	Sqn Ldr NK Bhasin	137
MODERN ARMS FOR DEFENCE FORCES—III SURFACE TO AIR SYSTEMS	Dr SS Srivastava	149
RESURGENCE OF AFLOAT AIR	CDR V Koithara, IN	162
COMMAND CONCPPTS	Brig NSI Narahari	170
THE ART OF LEADERSHIP MAN- AGEMENT AND OFFICER-MAN RELATIONSHIP IN ARMED FORCES	Major KK Dogra	175
OFFICERS' APPRAISAL SYSTEM IN DEFENCE SERVICES	Sqn Ldr KN Parik	190
BOOK REVIEWS		199
NATIONS IN ARMS—THE THEORY AND PRACTICE OF TERRITORIAL DEFENCE (<i>Adam Roberts</i>); THE AMERICAN WAY OF WAR—A HISTORY OF UNITED STATES MILITARY STRATEGY AND POLICY (<i>Russell F. Weighley</i>); TWENTY NINTH DAY : ACCOMMODATING HUMAN NEEDS AND NUMBERS TO THE EARTH'S RESOURCES (<i>Lester R. Brown</i>); MODERNIZING THE STRATEGIC BOMBER FORCE : WHY AND HOW (<i>Alton H. Quanbeck and Archie L. Wood</i> with the assistance of <i>Louisa Thoron</i>); MAN OF ARMOUR: A STUDY OF LIEUT GENERAL VTVYAN POPE AND THE DEVELOP- MENT OF ARMOURED WARFARE (<i>Ronald Lewin</i>); KURUKSHETRA WAR; A MILITARY STUDY (<i>Major P. Sensarma</i>); A BATTLE HISTORY OF THE IMPERIAL JAPANESE NAVY (1941-1945) (<i>Paul S. Dull</i>); THE MARINE OFFICER'S GUIDE (<i>Colonel Rebert D. Heinl Jr</i>); AYO GURKHA (<i>G. M. Marks</i>).		
SECRETARY'S NOTES		212
ADDITIONS TO THE USI LIBRARY		213

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Army and Politics in India

LIEUT GENERAL SK SINHA, PVSM

INTRODUCTION

The Indian Army is the only army of a major country of the Third World, which has devotedly upheld the concept of the supremacy of the civil and has never transgressed the bounds of professional service to the Nation. It is widely believed that there is a nexus between economic underdevelopment and military dictatorship. The Indian example belies this belief. Even the economically developed countries of the world have had their history of military rule. Cromwell and Bonaparte rose to political power from the ranks of the Army. Against this background, the fact that the Indian Army has not been involved in politics, is indeed a unique phenomenon. This has been the subject of comment and speculation by many. A realistic appraisal of this phenomenon should be carried out on the basis of an analysis of our past historical experience, the role played by the Indian Army since Independence and the consideration of factors that have a bearing on this issue. Such an analysis will not only give us a better insight into this problem but will also help us to crystal gaze into the future, and arrive at the right conclusions.

PAST EXPERIENCE

DEMOCRACY is generally considered to be a product of Western political thought. No doubt the present refinements of the democratic apparatus owe their origin to political developments in different countries of the West. This does not mean that the basic concept of the supremacy of the will of the people, enshrined in a democratic form of Government, is something exclusively Western in its origin. Long before Plato and Demosthenes stalked the political stage in the ancient city States of Greece, this idea had found expression in the polity of India. The Indian concept of the King being a trustee of his people and an upholder of the rule of "Dharma" had a basically democratic content. The banishment of Sita in the Epics, epitomises the supremacy of the will of the people. Coming to a more historical period, one finds flourishing republics in India, both before and during the invasion of Alexander in the Fourth Century BC. Democratic ideals survived for

thousands of years in our village panchayats which withstood both Mughal and British imperial rule. Thus, after Independence in 1947, the democratic seeds sown in the Indian soil, quickly found their roots, because they were not basically foreign bodies.

Connected with our old democratic tradition is another interesting fact of our history. The only instance of a military coup in the Hindu period of our history was of Pushyamitra, the Commander-in-Chief, slaying Bidharta, the last of the Mauryan rulers in 185 BC and becoming the King. Another instance may be said to be that of Hyder Ali. In almost all other cases, even including Sher Shah, it was more a case of a ruling chief or a member of the royalty, who either had military ability or was served by militarily able leaders, acquiring political power. More often than not, it was a case of Governors of outlying provinces asserting their independence. In this respect, the Indian tradition has been different from that of many countries of West Asia, where successful generals have repeatedly overthrown their Governments and assumed political power. This highlights that military involvement in politics is something foreign to Indian genius.

Our democratic background and a political military tradition, got reinforced during British rule. For their own reasons, the British fostered a sense of aloofness in the Indian Army, so that it did not get "contaminated" with the nationalist aspirations of the people. Recruitment to the Army was generally confined to areas with a loyal history and to individuals from families of proven loyalty. The Army was made to live an insulated life in its cantonments. Any form of political discussion was taboo in officers' messes. Thus, for nearly 200 years of British rule, the Indian Army led a completely secluded life, oblivious to political developments in the country, except for being occasionally called out for very temporary durations, in aid of the civil power to maintain law and order.

Yet another notable fact was that Mahatma Gandhi conducted his struggle for Independence on completely non-violent lines. This unique movement did not even remotely encompass the Army's involvement and the Army generally remained a silent and aloof spectator to the political developments in the country. It is true that the Indian National Army was to an extent, a politicised force. However, its relatively small numbers, the short period of its existence and the fact that it operated only outside the frontiers of India, did not permit it to make any serious impact on the apolitical outlook of the Indian Army. It is also pertinent that despite all the popular support given to the Indian National Army,

the Government of Independent India, decided not to allow its personnel to join or rejoin the Indian Army. They were given pension and provided other rehabilitation benefits, but were not taken into the Indian Army. This was done primarily to ensure that the discipline of the Army was not impaired and its apolitical outlook not affected.

A spin off from our nationalist movement for Independence which covered a period of nearly half a century, was the fusion of an elite culture with mass culture, leading to the emergence of a politicised and effective middle class. Such a middle class provides the bulwark for a functioning democracy. Its presence has contributed towards preserving democracy in India. Conversely, the near absence of such a class from the political scene in Pakistan and Bangladesh has contributed to the prolonged eclipse of democracy in those countries.

After Independence, India was indeed very fortunate to have political stability provided by a very mature political leadership with a strong popular base. A devoted democrat, Jawaharlal Nehru, ably steered the ship of the Indian State for the first two decades of Independence. In this respect the Indian experience was very different from that of the break away State of Pakistan, which in 1947 have shared a common heritage with India. In India, an army conditioned by a tradition of several centuries of unquestioning acceptance of civil supremacy, readily and enthusiastically, welcomed the establishment of democratic rule in the country. In the years after Independence, India faced numerous crises, both from across the border and internally, but at no time was the civil-military relationship in the country disturbed or the principle of civilian supremacy questioned. This fact is a tribute both to the maturity of our political leadership and to the high sense of discipline in our Army.

ARMY'S CONTRIBUTION

Although the Indian Army has always remained apolitical, it does not mean that it has not influenced the course of political developments in the country. In fact both in India's attaining Independence and India's preserving democratic values, the Indian Army has made very significant contributions. It has done so in a silent manner, but before we discuss how this has been done, we would do well to be clear in our mind as to what precisely is meant by remaining apolitical. This should not be construed to mean lack of political awareness or foregoing the right of a citizen to cast a vote at the elections. On the contrary, a truly apolitical army should have political awareness and its soldier interested in exercis-

ing his democratic right. However, his political awareness should convince him that the army's direct participation in controlling political affairs or wielding political power, is always counter-productive. Such a realisation is the best guarantee for preserving the apolitical outlook of an Army.

Under the compulsions of the Second World War, the British were forced to recruit Indians as officers in very large numbers in the Indian Army. A large number of these young Indian officers were fresh from the Universities of India, where they had a long exposure to nationalist thinking, during the struggle for Independence. They were not imbued with any sense of pronounced loyalty to the British Crown. Even amongst the illiterate Indian soldier, a degree of political awareness had come about. A very large number of these soldiers had served in overseas theatres of war, including South East Asia. They had seen how in the early period of the War, Japan had humbled the colonial powers of Europe. They had also seen convincing signs of the rise of Asian nationalism on the ashes of European colonialism. The liberation of these Asian nations had become a foregone conclusion. Thus, neither the leadership of Indian Army nor its rank and file, could now be relied upon to act as a prop for British Imperial rule in India. The formation of the Indian National Army in Malaya mostly comprising prisoners from the Indian Army, and the occurrence of Naval Mutiny at Bombay and Army mutiny at Jubbulpore, only showed the signs of time. After the Second World War, an economically and militarily exhausted Britain was not in a position to maintain an effective British military presence in India. Deprived of the assured loyalty of the Indian Army for preserving its imperial rule, Britain had no other option but to effectual withdrawal from the Indian sub-continent. Viewed in this context, the Indian Army made a silent but a very significant contribution towards the attainment of Indian Independence.

After Independence, the Indian Army has been rendering singular service to the Nation, covering a wide spectrum. It has been contributing towards national stability, national integration and national defence. During the Partition riots, the local civil administration in devastated areas had crumbled down and the Army had to be used extensively to maintain order. It was the sole effective instrument to execute Government policy in areas subjected to unprecedented communal carnage. Not only was the Army used for restoring order but also for running camps housing millions of refugees and escorting several millions of them across the border. The Army has continued to perform the role of assisting in maintenance of order, albeit on much smaller scale, in the

decades following Independence. The Army's diminishing role in this sphere has, no doubt, been a welcome development. Apart from restoration of order, the Army has also always been called out, whenever any serious natural calamity has overtaken the country in the shape of floods, cyclones and earthquakes. The assistance rendered by the Army on such occasions has been of great value.

The Army's contribution towards national integration has been of particular significance. With personnel drawn from different parts of the country and belonging to different religious, linguistic, ethnic and cultural groups, the Indian Army has been a symbol of national unity. Living and serving together in the Army, the soldiers develop a marked sense of national unity and learn to speak the same language. About 50,000 of them retire from the Army every year and go back to civil life, imbued with the ideals of national unity. Besides contributing towards national integration in this quiet manner, the Army has also made other more positive contributions towards attaining this goal. In 1947, India had some 500 semi-independent States, which could provide all the required impetus for the fragmentation of the country. Sardar Patel's genius did not allow this possibility to materialise but it was the Army which constituted the ultimate sanction behind his efforts to bring about a politically unified India. The presence of a strong professional army was an important factor, influencing the Princes to merge their States with the Indian Union. Where this process could not be achieved peacefully, the Army had to be used to execute the Nation's will as in Junagadh, Hyderabad and Goa. Violent break away movements by misguided elements impinging on national integration as in Nagaland and Mizoram, had also to be kept in check by the Army. In this role, the Army's contribution has not only been confined to keeping violence under control but has included winning the hearts and minds of the insurgents.

The Army's contribution towards national defence is too well known to need reiteration. Suffice it to say that it successfully faced a military invasion in Kashmir within a few weeks of Independence, and dealt with aggressing forces from across the border in three subsequent wars in 1962, 1965 and 1971. Political and military unpreparedness brought about a debacle in 1962 but the honour of our arms was largely retrieved in 1965 and gloriously vindicated in 1971.

Besides making its contribution towards national stability, national integration and national defence, the Army has also contributed in a large measure, towards preserving democratic ideals in our country. By

not meddling in politics and serving the Government, with professional competence, the Army has played a very significant role in preserving democracy. The Army's a political attitude has also, no doubt, been appropriately reciprocated by different political parties in the country, who have refrained from attempting to politicise the Army.

POSSIBILITIES OF MILITARY INVOLVEMENT

Having examined the above background in terms of our past heritage and the Army's role in our national life since Independence, it is now pertinent to consider the extent to which there is any possibility of military involvement in politics. India is a country of continental dimension, with wide disparities in both ethnic and linguistic composition of the people inhabiting the country. No large country of this size and diversity, has had a history of military coup. Thus, the size and complexion of the people preclude such possibility.

The Indian Army has a wide recruiting base, spread throughout the country. Since Independence, the old concept of martial race stands discredited and recruitment to the Army is aimed at giving each State of the Union, adequate representation in the Army, in proportion to its recruitable male population. This is as it should be. The entire Nation must share the burden of national defence and must have a sense of active participation in it. Broad-based recruitment to the Army is, therefore, undoubtedly a step in the right direction. It is significant that even in the British period, the martial race theory hardly applied to recruitment into the officer cadre. Of course, the number of Indian officers till the onset of the Second World War was kept insignificantly low. Nevertheless, with officers recruited from different parts of the country distributed in different regiments, the possibility of any regional clique in the officer cadre developing political ambitions, was kept effectively in check. The process of broad-based recruitment of officers got considerably accentuated after Independence. Recruitment of officers is being carried out on an All-India basis, with merit as the sole criterion for selection and with no reservation of vacancies for any regional or other group. It is interesting that out of the eleven Indian Chiefs of Army Staff since Independence, only two have been from the Punjab, the old traditional recruiting area of the Army. The remaining nine have been from different parts of the country, including seven from the States in the South.

It is a truism that the motivating force behind a mutiny is provided by the soldiery and behind military coup by officers. Broad-based recruit-

ment to the Army, particularly to the officer cadre in a large country of the size of India, is the best guarantee against military coup or military involvement in politics. Not only should the recruitment of officers be broad-based, but the Army must also always have a cadre of educated, enlightened and contented officers. In this context it will be unfortunate if army officers are allowed to develop a feeling of being discriminated against, in relation to civil servants, who remain close to the centres of power.

Three decades of democratic functioning since Independence, have fully established the tradition of subordination of the military to the civil in India. This subordination has to be to the civil power represented by the elected representatives of the people and not to any civil department or civil service. Increased economic progress, improved educational standards and further political awareness among the masses, will effectively rule out any possibility of military intervention in the future. The nexus between economic underdevelopment and military dictatorship would then have lost all relevance to Indian conditions as India would have crossed the threshold of underdevelopment.

CONCLUSION

Winston Churchill had referred to the 2 million strong Indian Army of the Second World War as the largest volunteer army known to history. Today, the Indian Army is one of the largest armies of the world and is the largest apolitical army of the Third World. Its apolitical nature is a product of history and is in conformity with the heritage of the Indian people. The political culture developed since Independence has indelibly reinforced the past traditions. Parliamentary form of government, of which civil supremacy over the military is a necessary adjunct, stands firmly established in India. The four important ingredients of a functioning democracy—fair elections, independent judiciary, free press and apolitical army—have taken deep roots in the Indian soil. Thus, unlike most Third World countries, Indian polity will remain free from military intervention and the tradition of civilian control over the military apparatus, is not likely to be disturbed.

China's Policies and Postures

After Mao

MAHARAJ K. CHOPRA

1. PURSUIT OF STABILITY

IN China's post-war history the year 1976 would be a landmark. First, death hit Premier Chou Enlai, the ablest of China's statesman-administrator, who had kept the state on an even keel amidst violent turbulances. Then died the veteran Marshal Chu Teh, the senior-most army general and the symbol of China's military might and discipline. And then in September death took its biggest toll in removing Mao Tse-tung himself from the Chinese scene for ever. As if to underline the tremendous shock thus received by China's 900 million people one of the worst earthquakes of centuries took 700,000 lives and devastated a major industrial city. With the removal of the three topmost men from the highest echelons, struggle for leadership commenced, punctuated by mass arrests. Thus the national fabric was torn up further, accompanied by unrest, violence and grave uncertainty about China's future.

Of all these portentous events the most significant was the passing away of Mao. Such a gap did it create and so swift were the developments that many observers wondered what all these would lead to, who was in authority and what was its credibility, what role the army had assumed, what had happened to Maoism? And the question of questions was how far the new regime was stable?

What happened during the next couple of years, and especially since the fall of 1977, went to show that the new leadership had been all out to capture power, legitimise itself and restore stability to the nation's governing processes. First, in July 1977 the Central Committee of the Chinese Communist Party confirmed Mr. Hua Kuo-feng as Chairman. It permitted Mr. Teng Hsiao-peng to return to political life, thereby winning wide acclaim from several sectors of the population. It expelled Madame Chiang Ching, Mao's wife, and the other

members of the "Gang of Four" from the party "once and for all". Then a full session of the Eleventh Party Congress was held which further reinforced the regime of the moderates. Finally, in March 1978 was held the Fifth National People's Congress—China's Parliament—attended by 5,000 delegates, which demonstrated that the regime had a wide political base.

Thus, within two years of Mao's demise institutions took the place of personalities in giving shape to the governing processes. Among the men in power were Mr. Hua Kue-feng, Party Chairman and Prime-Minister, and Marshal Yeh Chien-ying who from the previous position of Defence Minister had been elected Chairman of the Party's Standing Committee—in fact the head of the state, although the title was abolished. The resurrected Mr. Teng became the seniormost Vice Premier, Vice-Chairman of the Military Affairs Commission, and Chief of Staff of the People's Liberation Army (PLA). A most powerful new comer was Marshal Hsu Hsiang-chien, a former brilliant commander and a vigorous advocate of modernisation of the armed forces.

And what happened to Maoism? There were two faces of Mao's ghost stalking China. One appeared little different from the real old image of Mao's lifetime—the godfather and helmsman. The new regime sanctified him and erected a huge mausoleum in the Tienamen Square in Peking. The other face was shrivelled and in distinct, perhaps almost a parody of the real one. That is the face one sees now, presuming one bothers to see it at all. Chinese leaders hardly use Mao's epithets of "revolution". China is described as "socialist democracy", in which persuasion and not coercion would be used. "Class struggle" and the "dictatorship of the proletariat" are still cited as China's objectives, but the emphasis is on leap forward towards higher productivity, scientific goals, and escalation of China's power. Mao is respected but is remoulded to suit the requirements of the new policies and postures.

2. DEVELOPMENT— THE ROAD TO POWER

In China the debate is said to be still going, in howsoever muted a manner, as to how much of the old orthodoxy should be shelved up and how much is to remain in the cupboard for use, but there is an absolute unanimity among the leadership on two points: that China must become a mighty state by the end of the twentieth century and that this should be effected by four modernisations: agriculture, industry, science and defence.

For this ambitious exercise the first requisite is proper environment. Stability, order and discipline are a must to begin with but are not enough by themselves, especially because the new regime realises that much of the turmoil of the past took place precisely in the name of these virtues. The new environment demands transformation of outlook, administrative changes and proper public relations to win mass support, on the basis of consent rather than coercion.

And China's environment has undergone a sea change. "Let a thousand flowers bloom, let a hundred schools of thought contend" is a slogan that has been revived, having been shut down in the 1950s as it gave rise to widespread criticism. Dissenting voices, said Marshal Yeh boost the morale of the people; and Premier Hua called on the intellectuals to "dare to think, dare to speak, and dare to act". Churches closed during the Cultural Revolution have been opened and drastic educational reform with emphasis on instruction have been in place of indoctrination, has been effected. New managers in the factories are being asked to make profit. Despite Mao's opposition to material incentives, the new leadership has instituted a system of "rational awards", which are hardly different from bonus. It is a sign of the new times that in the Peking square posters have been permitted demanding human rights and others condemning China's invasion of Vietnam in February 1979.

The blueprint of China's economy was given by Premier Hua to the People's National Congress in March last year in the shape of a ten year plan. Agriculture would be its foundation, of which the output would be boosted each year by 4 to 5 per cent. About 85 per cent of all farm work was proposed to be mechanised by 1985; and to divert the waters of the Yangtse River would be given priority in order to control the repeated draughts that ravage the arid plains of the north-west.

After agriculture China is to go all out for industry. The state plans to build 120 large-scale projects, including 10 iron and steel complexes, nine non-ferrous metal complexes, eight coal mines, 10 oil and gas fields, 30 power stations, six new trunk railways; and five harbours. Steel would be the key link in the modernisation programme, while development would be stepped up in the power, fuel, raw and semi-finished industries, and transport and communications. By 1985 China would produce 85 million tons of steel annually. Altogether it would then have 14 fairly strong and rationally located industrial regions.

As at present the blueprint for the economic miracle has three phases : mechanisation of agriculture and restructuring of existing indus-

try; next the quantum jump of factory production by 1985; and finally to upgrade technology and its application to the highest levels of sophistication. China watchers are keeping a close watch on the Peking's proclamations and potentials and hold divergent opinions. Some point out the basic pitfalls which are brought out more and more as opportunities to peep into China improve, particularly in respect of the existing social and economic conditions which are starkly primitive. Others hope that the West would aid China more generously than any other Asian nation—in its own interests, strategic as well as political. However here is a table showing the gap between China on the one hand and the USA and the Soviet Union on the other :

COMPARATIVE PRODUCTION—1978

	US	USSR	CHINA
Steel	135 million tons	166 million tons	34 million tons
Oil	474	629	110
Coal	654	796	651
Automobiles	9.2 million	1.3 million	15,000
Computers in use	340,000	30,000	2,000

(Newsweek, February 5, 1979)

SELF-RELIANCE v/S INTERDEPENDENCE

After the assumption of power by communist China in 1949 it became self-contained, almost clasutrophobic. But this self-insulation began to break even when Mao was alive; for instance China's trade with the outside world rose sharply from \$ 3.86 billion in 1969 to \$ 15 billion in 1975. Then, after Mao, China began obtaining short-term loans by buying turnkey plants from Western Europe and Japan. Port and other foreign-related communication facilities were improved. China struck long-term arrangements of economic nature with European Economic Community. The President of the Community visited China in March 1979, and it is not without significance that despite the Western powers' reluctances to support China in its invasion of Vietnam, one of them, Britain, struck a 14,000 million dollar deal in Peking precisely when the People's Liberation Army was capturing Vietnam's border towns.

China has been rather choosey and preferred to import technology rather than finished complexes. Some of the transactions in this connection may be mentioned. During the last three years it has bought

\$ 3 billion worth of turnkey plants from abroad. Individual items include British Rolls Royce "Spey" jet engines for the already purchased "Trident" passenger planes. Drilling rigs from Japan and helicopters from France for oil explorations have been important deals. Bargains have been struck for three large computers from Japan and for the United States "Cyber-172". China has also concluded arrangements with France for three power reactors with the consent of the USA (against which, incidentally, India has protested because unlike this country no safeguard conditions have been attached to the Sino-French transaction). As a multiple project the Sino-Portuguese deal provides a striking example. The plan is to process some of the Chinese oil in the Chinese enclave of Macao, located on the east coast but still a Portuguese colony. A group of Portuguese businessmen would build a major refinery and a deep water port.

3. MODERNISING THE ARMED FORCES

Ever since China opened its windows to the world, strategists have been debating the state of arms and equipment of the People's Liberation Army, and the debate has been both inside and outside China. Under Mao manpower, training, morale were the decisive factors; in short, the soldier was number one element on the list of combat constituents, and armament came next. The inclusion of defence in the four modernisations meant that thesis had been flung out of the window. Some strategic reasons for this are clear enough :

- (a) While in political terms China is well up on the super power ladder, in economic terms it rather belongs to the Third World. The only method to erase this contradiction is to combine its own undoubtedly high-level skill with sophisticated technology from outside.
- (b) China's armed forces and militia are no doubt highly capable of waging People's War, but are ill-equipped for modern warfare which demands advanced armament. China cannot build such armament all on its own.
- (c) In the present state of security environment no country, not even a super power, can dispense with allies and friends. In China's case the attitudes of the neighbouring states at least are important, and they must be won over as a cushion to its own resources.
- (d) In the high levels of confrontation, China is no match against the Soviet Union or the United States. Self-reliance is out of question.

In China, "modernisation" has more to it than elsewhere. Under Mao's influence the PLA was a highly indoctrinated force, and politics was stated to be in "command" not only in respect of the supremacy of the Party over the Army but also in respect of training, organisation and equipment. One of the first things the new regime, especially under Deng Xiaoping's inspiration, was to cut down political indoctrination and re-introduce the professional norms. Several military academies, which had been lying dormant, have had to be reactivated: China has been inviting ranking retired military officers from abroad to set up new models, and the generals have been promised hardware instead of pep talk about the superiority of man over weapon. Much work remains to be done in this field. This is partly because the "Gang of Four" is suspected to have several cells in the PLA, and partly because there are generals who sincerely believe that so long as China suffers from basic military deficiencies indoctrination would have a value.

A special aspect of modernisation is concerned with the structure and the composition of the forces; and here China's performance in its war with Vietnam holds a significant moral. The much-vaunted blitzkrieg was slowed down almost immediately after the start—and by resistance on the part of Vietnam offered by its militia rather than regular units. Observers noted that this was primarily because the Chinese had few armoured personnel carriers, heavy vehicles and air transport planes which could give its forces mobility and speed. The PLA looked like a horde of foot soldiers.

The PLA comprises 121 main force infantry and only 11 armoured divisions. There are 40 separate divisions of artillery. A compartmentalised structure of this kind is not suited to the requirements of modern war, which is largely mechanised and in which formations are a mix of armour, infantry and artillery, geared to concentrate their strength for a quick breakthrough and then exploit it rapidly.

Chinese tanks are a mix of the old Soviet TA-2 and T-34, and the Chinese built T59/63 is copied from the Soviet T-54 which Russia is discarding. There are few anti-tank weapons. More than one half of the Chinese submarines are old Soviet supplies. The patrol boats have Styx missiles of very short range, which have been outclassed. The bulk of China's air force consists of MiG-17s and MiG-19s, some acquired from Russia before 1960 and some Chinese versions, and a few MiG-21s. Only Peking and a few vital centres have air defence, but here again the SAM-2s, obtained from Russia long ago, are not very reliable. In short, much of the equipment is some 20 years old, which is anachronistic in an

era of supersonic strike aircraft and remotely piloted weapons of the one-shot, one-kill generation. Reports are that few Chinese commanders had till recently heard of anything like a "smart bomb" or electronic warfare.

Instances can be cited of hurdles in the way of re-equipment. Take aircraft industry. This was started at Shenyang in the late 1950s with Soviet assistance, beginning largely with the MiGs, but the withdrawal of this assistance dealt it a heavy blow. A more modern version of MiG-21 was tried, but it could not acquire Mach-2 speed nor an all weather capability. Simultaneously attempts were made to produce F-9, modelled on MiG-19. But no significant improvement in ceiling, speed, combat radius or avionics could be attained because of the lack of suitable material for engines and airframes and of electronic know-how. Meanwhile the production of IL-28 light bomber terminated in 1973 and of TU-16 in the same year after manufacturing only 60 aircraft. Thus the aircraft industry seems to have come to a dead-end.

Moves are reportedly afoot to integrate Chinese armoured divisions with some handpicked infantry. Copies have been seen of the highly successful Soviet armoured personnel carrier which gives the Red Army unrivalled battlefield mobility. The programme cannot be hurried under prevailing economic restraints, and wholesale re-equipment is out of the question. It has been calculated that China's small arms factories would take a year just to supply each soldier with an extra magazine-clip of AK-47 ammunition.

It seems therefore possible that a few elite units would first be formed to provide a mobile striking force. Troops would presumably be truck-borne instead of taken in armoured personnel carriers; integrated artillery support would come from towed 155 mm guns in the absence of the more usual self-propelled assault guns in which the PLA is notoriously deficient. At least two new model tanks have been under test at the Shenyang arsenals since the early 1970s to replace the old Soviet types. Steel shortages and design problems seem to have delayed production. A wheeled vehicle-carrying anti-tank guided missiles and a 75-mm or even a 105-mm gun is reported to be under construction as a cheaper, more-easily produced stopgap. The French AMX-IORC would seem to be suitable.

Chinese requirements of foreign hardware remain modest, despite the tremendous excitement caused in the Western circles. Interest has

been shown in the French MILAN and HOT anti-tank missiles as well as CROTALE anti-aircraft missile. All would be manufactured in China. There would be less difficulty with the communication system also urgently needed, because China's electronic industry is already handling quite sophisticated products. Problems would only arise when the armed forces got around to installing the miniaturised computers now becoming a standard processing requirement in modern weapons and signalling equipment.

The air force and navy also feature missiles at the top of their shopping list. China has no air-to-air missile to rival even the antiquated Sidewinder. Warships need new ship-killing missiles similar to the French EXOCET and an anti-submarine missile like the US ASROC. They are keyed into complex and expensive delivery systems which would involve a major investment---all depending upon the depth of the Chinese purse.

These are only a few glimpses of the China's problems of defence reconstruction which is sought to be completed during the next 20 years. The time span is realistic enough, but the premises that the national resources would be forthcoming in adequate quantities, that the foreign technology would be available, and that China's political life will encounter no major upsets must be swallowed with a pinch of salt. These are among those improbables about which firm predictions are not possible.

NUCLEAR STRATEGY

China has been in the nuclear field now for 16 years and from 1964 to date it has conducted 23 tests, which shows that the tempo of nuclear programme in the post-Mao era is maintained, for six of these tests have been conducted after Mao's death. It is acknowledged that China has a high potential in the nuclear field, judged for instance in the very early use of uranium for fission through indigenous enrichment, quick manufacture of hydrogen bomb, and progress in the miniaturisation of nuclear weapons.

China's atomic arsenal is stated to be comprised of 300 warheads, varying from four megaton force to 10-20 kiloton. In the delivery system are present all the "triads". There are about 80 TU-60 bombers with a range of 2,000 miles and a few home-made F-9s for tactical mission. As for missiles, there are about 40 of medium range (700 miles) and another 40 of intermediate range (1,500 miles). A multistage missile of 3,000 mile range capable of reaching Moscow has been under development, and an

intercontinental ballistic missile (range 8,000 miles) is probably under design. China's missiles are reported to belong to the first generation and lack precision and high speed.

There are reasons to believe that China's nuclear weapon programme has rather been slowed down since 1972, generally because of technological problems. Attempts are under way to overcome difficulties but meanwhile there have come into play some imperatives of the post-Mao era. First, the modernisation process is essentially for upgrading conventional arms, which is going to be expensive. Some cutdown in the funds for the atomic arsenals appears to be inevitable, so that the present allocation of nearly 30 per cent of the defence outlay could perhaps not be sustained. (China's defence budget, according to Western estimates, is \$30,000 million). Secondly, China is likely to concentrate on perfecting 3,000 mile missile as deterrent against the Soviet Union, shelving up for the time being the ICBM that could reach the United States. And thirdly, stress would be on miniaturised "nukes" for tactical combat purposes.

But, inevitably, China's nuclear effort would be influenced by international developments. For instance, if the super powers both decide to manufacture the neutron bomb, China might follow suit, fearing that it might be needed on its border with Russia. Similarly, much depends upon the future of SALT II and possibly SALT III. As things are China's strategy would continue to be based on the triple concept of nuclear-conventional-people's war, with high priority on the conventional.

4. CHINA AND THE SUPER POWERS

Which of the two super powers is more important for China? A difficult question. But let us remember that Russia is China's neighbour, while America is 10,000 miles away. Even in its days of worst relations in the post-war period, all that the US was able to do was to cast around it an arc of "containment". But the Soviet Union confronts it with 40 divisions along the border to the north and now possibly also with very significant presence in Vietnam to the south. In April last year when Peking demanded that Russia withdraw its troops from the frontier region Moscow replied by sending President Brezhnev to the Eastern regions to further reinforce the border.

Recently the Kremlin held a round table conference in Moscow on the topic of CHINA AFTER MAO. Every aspect—political, economic, strategic and military—was examined. The experts charged that the new

regime was perpetuating Maoism— it was anti-working class, revisionist, and the carrier of Mao's "three road banners". On the strategic-military front they concluded thus: under the bogey that war was imminent China had decided to become a mighty power; its real aim was expansionist, jingoistic and hegemonic; it had joined forces with the capitalist countries who were ready to supply arms; it had developed common or parallel interests with the USA not only in Europe but also in other continents; it was colluding with NATO and industrial-military complexes; it incited Japan to increase its forces and enjoined against force reduction in Europe on the part of Western powers; and it refuses to participate in all disarmament talks. In short, China was irrevocably committed to the evil heritage left by Mao.

From Peking's strident denunciations of Soviet policies and Russia's equally loud condemnation of China's policies, it would seem that both sides have burnt their boats once for all. And yet there are China watchers who suggest not to take things at their face value. In China's corridors of power there are both "doves" and "hawks", and their infighting is not over, linked, in fact not so much with personalities as policies. The struggle is between the right-wing faction who wants to go all out for modernisation and the left-wing faction which wants to stick to certain basic principles as modernisation proceeds. The doves argue that in the interests of not only security but modernisation itself peace with Russia would be the best goal at least in the short run. And, incidentally, it would suit the Soviet Union also in view of its massive programme of development of the Eastern territory, which lies mostly in Asia upto the Pacific Ocean.

At this stage we must bring in the US. When the US Secretary of State Cyrus Vance visited China in May 1978, experts said that one of his purposes was to keep China and Russia as far apart as possible, an assignment which did not look very easy at the moment. But shortly after the visit things began to change. Sino-Japanese Peace Treaty was signed in August despite the Soviet objection to the inclusion of "anti-hegemony clause". SALT II appeared to have been bogged down. The Soviet inroads into Angola and Ethiopia engendered further rift among the super powers. The entire gamut of US-Soviet relations concerning problems in Europe, Africa and Asia seemed to have grown complicated and unpredictable. Meanwhile China altered its stance towards the super powers. The USA was "imperialist" but satisfied with the status quo. The Soviet Union was "socialist imperialist" with world-wide ambitions and expansionist tendencies. Peking advocated US presence

in the Asian Pacific and had no objection to the US-Japan Security Treaty. It wanted closer relations with Japan with enhanced military might. It encouraged the USA to place sea communications under tighter vigilance and offset Soviet power in Africa, the Middle East, Europe and Asia.

Thus the normalisation of relationship between China and the United States in December 1978 was partly the logical conclusion of the detente process which began in 1972 and partly the outcome of the prevailing strategic climate. The US has proclaimed that the Sino-American ties are not an alliance, that these would not affect its relations with Russia, and that America would sell China goods and technology of economic nature and weaponry only of defensive nature. When Vice-Premier Teng visited the United States in February this year, President Carter said the US and China would consult each others on strategic issues, but he added that American interests were not the same as Chinese interests.

On its part Moscow has not appeared to be satisfied, and made no disguise of its suspicions that the entire exercise meant that China, Japan and the USA were ganging up on the Soviet Union. Moscow's response may be gauged at least to some extent by further reinforcement of its forces in the Middle Far East, installation of missiles in the Kurile Islands a few miles from the northernmost Hokkaido Island of Japan, and heavy assistance to Vietnam with expectations of facilities in the Cam Ranh port overlooking the South China Sea ocean route and, at a pinch, of missile sites. These are all the portents of a new power balance in East Asia.

And yet one ought not to be hasty in matters such as this. As far as it appears, the USA has not converted its new relationship with China into a strategic instrument. Indeed, there is an influential body of opinion in the United States to keep its options open, to devise a "triangular diplomacy" in which both China and the Soviet Union are balanced off in terms of American interests. In the last analysis the USA must keep the undeniable fact in view that while it would be treating China largely as a power that counts in its regional interests, the Soviet Union matters in the wide global setting. No matter what heights American ties with China assume in economic terms, in military terms these are likely to remain in a low key for sometime to come at least.

5. CHINA AND THE INDIAN SUBCONTINENT

China strategy towards the subcontinent during the Mao era was marked by three important features. One was its hostility towards India of which the germs lay in the 1950s and which erupted into the war of 1962. Since then China remains in occupation of the 12,000 sq. mile strip in the Indian territory of Ladakh. The second was to befriend Pakistan in every possible way short of a treaty alliance, and this it did by supplying arms to Pakistan, advocating "self-determination" for Kashmir, and political collusion. And the third was to seek neutralisation of the Himalayan border region that divides India and China. Since the passing away of Mao only one significant change has taken place in the latter two aspects, otherwise the position remains unaltered. The change is noticed in the building of the Karokaram Road that joins China and Pakistan through the high Karokaram Range. This strategic highway had been under construction for several years and was opened in June last year with full fanfare. It is 800 km long and connects Sinkiang Province to a point in Pakistan a few km from the capital of Islamabad. It is all weather road piercing through 5,000-metre high Khunjirab Pass, carved out of mountains and crossing several fast-moving rivulets fed by the surrounding glaciers. From Islamabad it is connected by local roads which lead up to the port of Karachi. Thus China has virtually direct access to the Indian Ocean. Besides, it has got a backdoor access to the troubled West Asia and Africa and a much quicker route to the European theatre. Connected with railroads in China, it will cut days and perhaps weeks off the present sea route through the Pacific and the Indian Oceans. The highway is a symbol of the Chinese resolve to further dig into the subcontinent as a matter of high strategy.

Very perceptible change has taken place in respect of India, although what it actually boils down to in brass tacks is still under debate. In general, a number of factors have contributed to the change. One is that the detente with India appears to be part and parcel of mending fences with as many Asian countries as possible. Another is that China sees no particular threat emanating from India and thus has no reason to perpetuate strained relations. Yet another is that in the overall setting China has only one major enemy—the Soviet Union. While the Indo-Soviet ties are close and New Delhi has several times affirmed that good relations with China would not mean bad relations with Russia, Peking still hopes to create for itself a position of vantage where even if the warmth created is small, it would still be valuable.

However, there is a difference over priorities in mutual relations. Indian leaders have categorically stated the settlement of the border question is a precondition for full normalisation. The Chinese have taken the view that the question be frozen for the time being and other matters be straightened out. From the Indian point of view the catch here is that China is sitting pretty over its illegal territorial gain, while for India the matter is of the integrity of frontiers and territorial sovereignty. India even looks ahead to a situation in which, after the settlement of the frontier dispute, the two countries would be in a position to relax mutual border tensions and even withdraw part of their forces now confronting across the Himalayas.

The visit of the Indian Foreign Minister to China early this year was expected to set the stage for further substantive negotiations, but short there happened China's invasion of Vietnam, which made the Minister cut short his visit. To millions of Indians this aggressive performance was not so much a matter of equation between Vietnam's attack of Cambodia and China's attack of Vietnam, a point on which so much stress was laid. It was an agonising flashback on what China had done to India seventeen years ago, through pretexts and by tactics which were almost exactly similar. When therefore our Foreign Minister stated that the Chinese presented a "strategic riddle"—a diplomatic description of the proverbial "Chinese puzzle"—he was howsoever unintentionally referring to the queer position that while on the one hand China professes to settle border disputes peacefully, on the other it launches a massive invasion precisely on the grounds of border rights.

That once again brings to the fore the question of how much involvement in the Indian subcontinent the Chinese would permit themselves in the pursuit of their strategic interests. One thing seems to be fairly certain that China does seem to have evolved some sort of yardstick to measure its national interests, which it has been propounding throughout the 1970s—which is that "hegemony" is to be opposed. This appears in the Shanghai Communique issued jointly by Peking and Washington, the peace treaty with Japan, and in the normalisation agreement with the United States. This is what the Sino-American communique of December 17, 1978 says :

Neither should seek hegemony—the domination of one nation over the other—in the Asia-Pacific region nor *in any other region of the world* and each is opposed to efforts by any other country or group of countries to establish such hegemony. (Italics mine).

China has demonstrated its faith in the hegemony thesis by seeking to cut Vietnam to size after its attack on Cambodia which, according to Peking, is an effort to dominate Indo-China. So far as the Indian subcontinent is concerned, China could do nothing to save the break-up of Pakistan and the establishment of India's undoubted ascendancy in the subcontinent. But it would keep a careful watch that this ascendancy does not convert itself into "hegemony" in accordance with its own security perceptions. The moment it does, measured by its own yardstick of course, there is likely to be trouble.

5. THE ASIAN OFFENSIVE

China's post-Mao posture is remarkable for getting on the right side of as many Asian countries as possible. Among them Japan is of course the first and the most important. Japan is a regional power, an ally of the United States, an anti-Soviet factor, and an economic giant. Peking has bent over backward to win it over where it can and keep on its right side where it cannot. Keeping ideology out of calculations, knowing that it would not cut ice in capitalist Japan, it deals with all its systems in a business-like manner. It encourages Japan to further develop its defence capability and thus turns a blind eye to the Japanese industrial-military complex. It supports Japan's claim over the four northern islands in the Kuriles which Russia seized during the Second World War and which Japan wants back. It favours US-Japanese Security Treaty and has no objection to American military presence on the Japanese soil.

The Sino-Japanese Treaty of Peace, Friendship and Cooperation comes as the culmination point of relation normalisation which began in 1972. The treaty is for a period of 10 years, and would be a super charged catalytic agent for bringing the two countries together. On the economic front the immediate effect has been the signing of a trade pact involving transactions worth about \$ 20,000 million and this has been described as the tip of an iceberg, for Peking's total requirements for the modernisation programme are computed to be \$ 300,000 million. Several joint projects have been initiated in addition to outright purchases, including manufacture of oil drills, oil exploration, ship-building, port expansion, steel plants, power stations and colour television. China's cheap labour and Japan's finance and technology are being dovetailed for a real leap forward in modernisation.

In the world's corridors of power the treaty marks a turning point in international relationship. It has been widely interpreted as a defeat

for the Soviet Union—for Moscow has failed to do what China has accomplished, that is, conclude a peace treaty with Tokyo, and also it has failed in pressurising Japan into abandoning the anti-hegemony clause which indirectly is directed against the Soviet Union. And if the strategic climate in the Asian Pacific worsens an open China-Japan-US alliance cannot be ruled out.

During 1978 top-ranking Chinese leaders made hurricane visits to all the countries of Southeast Asia, countries which had never trusted Peking and some of whom—notably Indonesia—had refused even to establish diplomatic relations. This was partly to offset the Soviet influence and partly in competition with Vietnam whose leaders also had embarked on a similar tour de force. The Southeast Asian states, Malaysia to begin with, had taken note of the political realities and sought to open a new era with China, but their suspicions had not vanished. Peking had all along talked of “revolution”, aided local guerrillas, and employed the ethnic Chinese in the region, numbering some 18 million, as political levers. The new stance promised relaxation of tension, even aid, support against “hegemonism”, and withdrawal of assistance to fissiparous forces. And yet, at the same time, there was no categorical shift from the typical Chinese device of making distinction between government-to-government and party-to-party relationships. It has been this latter tactic that enables China to build up its bridges of intervention.

The more recent events have had rather divergent impacts. So far as the Indo-China states are concerned, the Chinese have been virtually thrown out, and Peking is expected to carry on cold war, border tensions, and even more “punitive expeditions” that might involve Laos in addition to Vietnam. As regards the Association of Southeast Asian Nations (ASEAN), China’s use of force has its moral and would help keep alive the long-standing suspicions that stalk over the East Asian landscape. However, China’s detente with the Western powers, to which the ASEAN countries are orientated, is likely to assuage some of the frayed sentiments of these nations. But it is unlikely that the ASEAN objectives of making Southeast Asia a “zone of peace” or a “neutral zone” will be at all achieved. For the region is in turmoil and is the hotbed of great power rivalry, in which four of the greatest powers today are directly involved. Everything that is happening in China in respect of its foreign policies or internal developments tends to complicate matters.

In short, the post-Mao era remains a puzzle despite the floodlights of information and interpretations focussed on it.

Need for Closer Tri-Service Integration and Validity of the Integrated Theatre Concept for the Indian Armed Forces

SQN LDR NK BHASIN

INTRODUCTION

SINCE the dawn of Independence, we have spoken with a gust of the inter-services concept of India's defence organisation. Indeed, the Indian armed forces made an excellent start on this concept, over a quarter century ago. Even as the world's big powers having modern armies were still examining the new ideas, of armed forces' integration, born of the Second World War and the rapid technological changes that followed the Indian defence services took a number of steps for their implementation.

The first steps, which laid a sound basis for integration of the armed forces related to the stage of training of officers of the three services. The most important was the joint training of cadets, treated as a common pool for the three services, at the National Defence Academy. The courses run at the school of Joint Air Warfare and College of Combat were also aimed at joint training of officers of the three services; followed by graduation of the middle rung officers in an inter-services college, the Defence Services Staff College. The officers wound up studies with yet another inter-services institution of higher learning, the National Defence College.

Having thus launched the concept of integration of the armed forces, further steps were taken in phases in this direction at the higher levels of the defence services. At the service headquarters level, various inter-service committees were set up and at the apex, the Chiefs of Staffs Committee, with its chairman being elected in rotation, was cons-

tituted. These were actions which should have ensured inter-service hegemony and led to the desired objective in a phased and gradual process.

Yet the situation as it exists at present does not reflect a picture of the three armed forces moving towards the goal of integration. Far from it, the process of integration seems to have come to a halt. Instead of close-knit operational functioning, the three wings of defence live, work and fight as three distinct entities. They have separate organisations from the service headquarters level down to the lowest formation, separate combat planning, and they often compete at the higher levels for their respective share of scarce resources earmarked for defence from the national pool. The scenario, very often, is one of wrangles rather than harmony and integration where the choice has to be made between the claims of one or the other force.

What has gone wrong with the moves for gradual but consistent attainment of integration between the three services? First, we have not imbibed certain truisms emerging from conditions of modern war, applicable to the world as a whole, the foremost being that modern war must be fought by all the three services acting as one integrated force under a unified command. This means that not only in its operation, but also in long-range planning and optimum utilisation of resources for combat build-up, modern war calls for a total effort in a single unified direction.

This general truism is applicable to India with even greater force than elsewhere. We have to take into account the following factors: the short and intense nature of modern wars, characteristic of the conflicts which India has experienced; changing international power equations and the fact rate of technological change and obsolescence; long lead time for effective improvement, adjustment or changeover to new weapon systems; and finally, the judicious application of scarce. A blending of these factors in the organisation and preparedness of the armed forces is impossible of achievement without inter-service integration weaved into an institutional pattern. The aim of this paper is to discuss the need for closer tri-service Co-ordination and validity of the integrated theatre concept for the Indian Armed Forces.

NEED FOR GREATER INTER SERVICE INTEGRATION

COST FACTOR

A closer look will show that for India the road to qualitatively higher and more effective defence capability leaves no choice but to

rapidly achieve integration. The need to maintain a high level of defence preparedness and capability is imposed by the geo-political conditions of our borders and the possible threats from certain neighbours. It is no secret that presently we are forced to spend nearly a third of our national budget on defence even though the nation can hardly afford this expenditure. Nevertheless, if we have to have an army, air force and navy, they must in their unified strength be the most powerful force we can build within the precious national resources allocated. India presently possesses the fourth largest army in the world, and its indigenous industrial-scientific capability is fairly high, and what is more, it is still rising. There is no reason why with the best possible use of available resources, we shall not be a first rate world military power. But this presupposes integrated planning and operational integration of the three services.

The importance of cost-effectiveness can be gauged from the following statement contained in the *Annual Report* of India's Ministry of Defence for the year 1974-75: "In view of the overall constraints on availability of resources which also affects the Defence Services, the need for most cost-effective management of the resources being deployed has become even more acute than in the past. In order to ensure that full value is extracted out of every rupee spent it is necessary to adopt, on an ever-increasing basis, more modern management practices. It is hoped that a better understanding and appreciation of the methodology of modern management techniques would help in increasing identification of problem areas, which can be resolved with application of such techniques and a more cost-effective approach (directed) to the solution of the problems being faced in these areas."

The problem of working out cost-effectiveness of weapon systems in the modern context is a complex one requiring a total conceptual framework, without bias for one or the other wing of the armed force. It has moreover to be fitted in its rightful place in long-range planning.

DEFENCE PLANNING

In the field of defence, long-range planning has come to occupy ever-increasing importance in the decade of the seventies and its importance continues to grow. In the military management of more advanced countries whether belonging to the NATO or the Warsaw Pact nations, long-range planning has acquired crucial importance in defence. These nations are able to undertake these complex planning techniques for their national security objectives only because

they have achieved a high degree of integration. For India too, integrated defence planning, both long-range and short-term is a dire necessity.

In an informed depiction of the prevailing situation in regard to planning for defence in India, Mr PR Chari, Director of Institute for Defence Studies and Analysis, New Delhi, poses the issues relevant to our examination : "As at present, the defence plan continues to reflect individual plan put forward by the three services to the Defence Ministry. Specific problems that have a joint service bearing are studied by the Joint Planning Committee, and in some cases, by the Chiefs of Staff Committee. But there is no tenacious effort to plan the requirements of the three services and co-ordinate them at any level other than the Ministry. The essential function of determining priorities between the Services' requirements is also not undertaken in any satisfactory manner. This results in the Ministry's role essentially becoming one of negotiator of the proposals with Services Headquarters and the Ministry of Finance."

On a realistic assessment of the threat, certain defensive and offensive measures have to be taken. Utilisation of scarce resources for acquiring weapon systems assume major importance. Therefore, the question (as to) which type of weaponry should be obtained requires precise evaluation, and also consideration as to which service could be most cost-effective. Again, future operations in the subcontinent setting would increasingly acquire an inter-services character. It would consequently, be necessary to determine what might be the optimal distribution of weapon systems between the different services.

Some examples would make clear the type of problems that would require resolution through the defence planning process. Assuming that a quantifiable degree of damage is required of enemy installations, the task would be performed either by surface-to-surface missiles or bomber aircraft. The question arises: which alternative is cost effective? Or what should be the balance between surface-to-air missiles and interceptor aircraft? Again the defence of off-shore oil installations is a complex issue involving under sea vessels, surface craft, point defence systems and aircraft. What would be the optimal mix of all these systems? Such problems would exacerbate as the new types of conventional weapons, notably precision guided ammunitions, become available to our adversaries, requiring integrated counter-measures.

Weapon selection, which in the set-up of modern technological advance applied to weapon systems, makes an integrated plan approach

essential. In India, the prevailing organisational pattern in the Defence Ministry, that is, separate divisions corresponding to the different services, further adds to the complexity of the problems. The weaknesses of this organisational pattern are manifest: there is no inter-service approach to decide how the operational objectives can be best achieved, and by means which are most cost-effective and suitable. The decision-makers at the vital processing stage are officials of the Defence and Finance Ministries who can hardly be expected to apply professional standards, other than the financial yardstick, in taking decisions which have a vital bearing on the conduct of the future war.

It is apparent therefore that the need for greater integration between the Services is a prerequisite of modern defence management. Only in this way can it be possible to avoid the tendency to function in watertight compartments by the three adjuncts of the decision making process.

LESSON OF LAST CONFLICT

Much has been said of the close co-operation exhibited by the three services in the 14-day war with Pakistan in 1971 and the striking results this co-operation achieved. Yet in fact this co-operation was more an expression of spontaneity, of one Service in distress calling for help, to which the other Service responded. Sometimes the co-operation fell short of the possibilities and need, the fault lying not with one other service but of the failing of the organisation in which co-ordination and integration are not built in but are dependant on top-level co-operation of the Service Chiefs. Fortunately, the 14-day war with Pakistan was not drawn out to test the strains on co-operation which a longer conflict might have shown up. There was also the negative advantage of a similar or even lower level form of co-ordination between the Pakistani armed services, particularly the absence of co-ordination between their air force and army. This advantage may no longer be with India in future. It is known that sometime ago, a study team in Pakistan brought forth the conclusion that Pakistan's defeat (in 1971) was mainly due to lack of adequate co-ordination between the three armed forces. Pakistan has taken the lesson and has now decided to end this seclusion of their three services from each other. As a first step, they have located the headquarters of all the three services in the same town. Other steps are to follow. Pakistan has an advantage too, in the sense that its political history has brought about a hierarchical ranking in the military, making it possible to place one Service chief at the top range thereby lending him the prestige of Chief of Defence Staff.

INADEQUACIES OF EXISTING OVERALL SET UP

GEOGRAPHIC FACTOR

To the exigencies of modern war and India's own experience of conflicts with its neighbours must be added the special factors applicable to this country, namely the geographic factor, the size of the country and the need to provide security to a far flung border, as also the nation's distant island territories. This factor emphasises the lags in the prevailing set-up which by failing to provide for the co-ordination of the three Services generates indecision, lack of cohesiveness and loss of time. In present day conditions, the continued absence of unified control and direction of the defence effort cannot but lead to a veritable disaster in a future war.

LIMITATIONS OF THE EXISTING HIGHER ORGANISATIONAL SET-UP

It is necessary to take into account the severe limitation in the organisational pattern of inter-service co-operation as at present obtaining. The apex body at the Service Headquarters level giving expression to Inter-Service co-operation is the Chiefs of Staff Committee. At the level of area commands of the army and air force, there exists a liaison as the sole form of co-operation. The drawback in this set-up is, in the first place, that co-operation between the Services depends on personalities rather than being in built by means of an organisational structure. At the area command level of the Services, the form of co-operation is more or less an art of liaison. These limitations were made clear when, at a crucial stage of our military history, the tenure of two Service Chiefs had to be extended on the ground of maintaining co-operation between the Services.

Good as first steps, the form of co-operation between the three services we have adopted remains merely a top-level coming together of the Chiefs, with their respective organisations remaining separate and independent Services in all respects. The periodic meeting of the three Chiefs which is what the constituted apex body amounts to, is totally inadequate for the present needs and hardly serves the objective of gradually rolling out the process of inter-service co-operation. The old ideas of co-operation being affected by three equal and independent service commanders acting in concert are now treated as outdated all over the world and so is the case here.

We have to seek remedies not in abstraction but on the basis of the situation as it exists. In the present format, a three-tier approach is desirable :—

- (a) Integration of the top policy making organisation.
- (b) Integration at the level of Ministry of Defence.
- (c) Inter-Services integration.

These three aspects are inter-twined. The existence of a number of top policy making committees tends to diffuse the formation and execution of policy. Thus, here we have two top bodies, the Cabinet Committee responsible for Defence, and the Defence Minister's Committee on which are included, besides the defence minister, the Minister of State for Defence, three Service Chiefs, Defence Secretary and Financial Adviser (two civilian officials). The diffusion caused between the two committees at the top gets emphasised in the absence of a unified inter-Services set-up. In its functioning, effective decision-making rests heavily on the bureaucratic component of the frame-work, namely, the Defence Secretary and the Financial Adviser.

The same lacuna exists in the matter of co-ordination between the claims of the three services which in the absence of a unified structure at the Services level, falls in the lap of the departments in the Defence Ministry dealing with each of the three services. Here co-ordination of the three Services' claims is a matter for the Defence Secretary to decide. All this makes a civilian official the king-pin of the defence effort, a situation fraught with possibilities of serious aberrations.

Partial rectification of the first lacuna, namely, policy-level processing has been gradually provided by associating the three Service Chiefs with the Cabinet Committee responsible for Defence. Although the Service Chiefs are not members of this committee—the highest policy making body of Defence—they are being constantly invited to its meetings when decisions of policy have to be taken. If the practice of associating the three service Chiefs with the Cabinet body is made regular and customary, the situation will alter in a big way and decision-making at the highest level placed on a firm pedestal. Likewise, the secretarial gap of three departments in the Ministry functioning as water-tight compartments can be largely filled by the formation of a joint committee in the Defence Ministry, with liaison to the Chiefs of Staff Committee. This step will serve a double purpose—co-ordination at the level of the bureaucracy as well as upgrading the professional point of view by liaison with the service Chiefs.

The crunch of building a unified defence mechanism, however, lies in achieving armed forces' integration, of moving towards the goal of all

the three services acting together under a unified command. Taken at the top, the issue is often posed as one between the obtaining Chiefs of Staffs Committee versus a professional Chief of Defence Staff. The trend all over the world is undoubtedly in favour of the latter, but it would be dangerous to deal with defence organisation without relevance to its continuity. In India, moreover, all forms have to comply with the system which places the political leadership in a position of supremacy in the nations' defence effort. The three services are subordinate to the political leadership which rests with the Defence Minister and through him, with the Cabinet.

The following observations by the Defence Minister in Parliament make the position amply clear in so far as the idea of Chief of Defence Staff of the Indian armed forces goes :—

“A suggestion has also been made that in order to co-ordinate the work of the three Chiefs there should be a super Chief. I do not think there is any necessity for that because we have the Chiefs of Staff Committee which regularly meets and the senior-most among the three Chiefs presides over the meeting. In this way the activities of the three forces are co-ordinated. Apart from that, there is a weekly meeting of the Minister with the three Chiefs along with Cabinet Secretary, the Secretary of the Defence Ministry, Secretary of Defence Production. We meet without agenda. Matters are brought by the three Chiefs before the Committee and on many occasions, decisions are taken on the spot because the Secretaries are there; Cabinet Secretary also gives valuable suggestions in the matter. The House should be satisfied that the direction at the top, whether it is at the political level or at the Chiefs of Staff level, is quite integrated and it has stood the test of time in very emergent situations and even in urgent situations and, therefore, there is no necessity of changing the structure at present. This question of having a super co-ordinator has been considered several times in the Ministry and it is apprehended that the imposition of a super Chief among the three Chiefs will not serve any useful purpose. It may create certain complications and retard decisions.....You cannot compare Indian situation with other countries, because their conditions in several matters are quite different from this country. In several countries the direction given to the Armed Forces is only by some personnel of the Army. Here, the direction and orders are not by the Army, Navy or Air Force people. Here the direction has to be from a political head—I think that will have to be maintained.” (Defence Minister Shri Jagajivan Ram's reply to debate on Defence Ministry's Budget demands: 05 Jul 77).

INTEGRATED THEATRE/TASK FORCE CONCEPT FOR INDIA

HIGHER DIRECTION

Taking Defence Minister's remarks as a framework, we must therefore seek to advance the cause of inter-service co-operation, gradually

leading to integration, by improving the mechanism we have at the top. This can be attained by strengthening the Chiefs of Staff Committee, by enlarging its operation, by adding to the competence and effectiveness of the secretariat at its disposal, and finally, by giving greater weightage to the (rotating) Chairman's authority. The Chairman of the Chiefs of Staff Committee can, for the duration of his function (as chairman) dedicate himself to problems of inter-service nature rather than to those which are exclusive to his own service. Next, the liaison of the Chiefs of Staff and the Defence Minister has to be institutionalised in order to bring about effective integration between the political leadership and professional leadership of the nation's defence apparatus. It has also to be assured that intermediate forms, such as the bureaucracy, have a restricted function in policy making and day-to-day operations.

INTEGRATED THEATRE/TASK FORCES

At the second layer comes the question of closer coordination of the three Services at the theatre or area command level, involving the structure of the three Services, in the operational sense. The basic concept which has to guide our advance in this process is to build integration of the Services in the course of their work and combat—the latter being synonymous in peace time with preparedness for combat. What are the steps that can be taken in this direction within the existing framework?

First and foremost is to bring about closer integration at the level of area commands. It has to be primarily integration between the Army and air force in certain commands, while the navy becomes the prima donna in the area of their operation. As things go, even the liaison between the Services is extremely lop-sided. The Western Army Command is in Simla whereas the Western Air Command is in Delhi; the Eastern Army Command is at Calcutta while the Eastern Air Command is at Shillong; the Central Army Command is at Lucknow but the Central Air Command is located at Allahabad, and so on. The two area commands appear too keen to stay at a safe distance from each other, over-jealous to have total jurisdiction over their location rather than to be close to each other for inter-relating their operational functions. Being close to each other should provide the physical and psychological conditions for co-ordination, a process which has to be extended beyond liaison at the top, to their respective combat preparedness. Better co-ordination between the area commands should also enable them to interweave each other's plans and thereby foster closer understanding at the operational level.

A proposal which merits examination in the quest for integration, is of having integrated forces in various theatres, carved out according to a strategic plan. Perhaps this concept is best illustrated by the organisation of the United States military commands, which are integrated commands and their C-in-C exercises operational command of all major component forces of all three Services in the theatre. An inter-Services theatre force in the Indian defence set-up will essentially mean a combination of power of two or three services to create an instrument for thrust into the enemy's structure or territory aiming to achieve specific task/mission most expeditiously. What is more, it would mean a new concept to which selected commitment can be made. If the creation of such task forces fits in with the nation's strategic defence plan, then by this step the defence capability will undoubtedly be enhanced and the process will generate the environment of integration which is bound to influence broader areas of the defence organisation. It is true that theatre task forces enhance operational preparedness, and the existence of such quick reaction forces has the inherent capability of lightening response—an essential requirement in a limited war. Moreover existence of such quick reaction forces has a deterrent value in peace time as well. But the idea has its pitfalls too, as any proposal which goes beyond an established system is bound to. Certain precautions have necessarily to be taken in handling the concept of creating task forces. The prime precaution being to retain intact the present lay-out of area commands and their spheres of operational responsibility, and as far possible carve out task forces out of existing resources, so that prohibitive costs do not become a serious constraint.

The following may be considered in this connection:—

(a) *Reorganised Integrated Commands*: As a first step the Indian sub-continent should be sub-divided into five theatres of operation structured on the integrated theatre concept—Eastern, Central, Northern, Western and Southern. The area of responsibility being as follows :—

- (i) Northern Command—J&K, Himachal Pradesh and northern portion of Punjab.
- (ii) Western Command—Rajasthan, Haryana and Southern portions of Punjab.
- (iii) Central Command—UP, Tibet Border, Indo Nepal Border, Madhya Pradesh and Bihar.
- (iv) Eastern Command—West Bengal, Assam, Arunachal Pradesh, Mizoram, Nagaland, Meghalaya, Manipur and Tripura.
- (v) Southern Command—Andhra Pradesh, Tamil Nadu, Maharashtra, Kerala, Karnataka and Orissa.

(b) *Location of Headquarters.* Economic considerations would dictate that integrated command headquarters should be located so as to utilise the existing facilities as far as possible. The following locations for the headquarters of the integrated commands are suggested :—

- (i) Northern Command — Udhampur
- (ii) Western Command — New Delhi
- (iii) Central Command — Lucknow
- (iv) Eastern Command — Gauhati
- (v) Southern Command — Bangalore

(c) *Composition.* The forces' mix in each of these theatres will be different in size and depending on its area of responsibility. One tactical Air Force Group (Comprising elements of offensive air support and air defence of tactical area) should be placed alongside each of the Northern, Western, Central & Eastern theatre Commands, on a more or less permanent basis. It would be desirable to place the border security force element and coast guards also under the theatre commander where applicable. The Southern theatre command should comprise the naval forces and amphibious assault brigade group and certain elements of air defence.

(d) *Reorganised Staff Structure.* At theatre level some of the technical and administrative services performing common functions for all the services like logistics, communications, medical, intelligence, administrated and placed under a Principal Staff Officer belonging to the service which happens to be the major user. The single service specialist expertise should be available to the commander to deal, in detail, the exclusive problems of the service. A joint secretariat could ensure that joint and individual service problems are properly channelled through the integrated staff. The staff structure would thus require least change, to enable it to move from peace time planning to wartime execution of plans, with greatest economy.

(e) *Strength.* In Northern, Western, Central and Eastern theatres forces shou.d consist of the following :—

- (i) Two or three Corps (depending on area of responsibility and the role assigned to the theatre commander).
- (ii) Tactical Air Group consisting of FGA and AD sqns and missile wings (depending on quantum of air threat/air support envisaged).
- (iii) BSF element in the area of responsibility.

(f) *Naval Task Forces.* The Southern Command should consist of the naval fleet and amphibious assault brigade group and required elements of air defence. It would be necessary to create task force to protect our growing maritime interests based on the overall

maritime strategy. The task forces thus constituted should be considered a sort of elite of the Indian armed forces, a mailed fist capable of delivering counter blows at the enemy. It must naturally be a part and an integral part, of the broad lay-out of India's defence parameters.

(g) *Command and Control.* A unitary form of headquarters at all theatre command levels is necessary for quick and more responsive decision making. The creation of a single command has necessarily to be achieved for each task force, and in doing so the susceptibility of the top men have to be dealt with on a principled basis, the bias in each case favouring selection from the relative force which predominates in that theatre at that time according to its allotted role. The theatre commander should exercise authority on whatever inter-Service element form part of their Command. In the case of Northern & Western theatre task force, the bias has to be in favour of the army, in the Eastern and Central theatre a relative parity of army and air force should be allowed and the Command rotated to the two services in turn. In the Southern theatre the task forces will be dominated by the navy.

(h) *Reorganisation of Air Commands.* Presently, the IAF does not possess a recknable strategic air capability. Should it become necessary at a subsequent stage, the formation of a strategic/strike Air Command could be considered. However, it would be necessary to create Air Defence Command and Air Transport Command since it would not be cost-effective to allocate scarce air resources to various theatre commanders on permanent basis, a luxury that even an affluent country like US can ill afford.

CONCLUSION

There is no doubt that modern defence demands jointly co-ordinated, and integrated operations. The situation as it exists at present does not reflect a picture of the three armed forces moving towards the goal of desired integration. The choice is either to achieve this co-ordination by greater integration or to unify the service under a joint Chief of Defence Staff. At the present juncture Indian armed forces are unprepared for the latter and so we must seek to advance the cause of inter-service co-operation, gradually leading to integration within the existing framework. This could be well achieved by having a powerful Chief's of Staff Committee at the highest level and integrated theatre commands under it that would integrate the nation's defence system more efficaciously.

Any proposal which goes beyond an established system is bound to pose problems. None of them however, seem insurmountable. May be the greatest mis-apprehension, real or imagined, would be psychological. Military fundamentals are rapidly changing, and call for the adoption of some radical changes for a greater degree of integration in the operational functions of the three services, which exist for a common goal, to fight the same enemy.

Modern Arms for Defence Forces-III

Surface to Air Systems

DR SS SRIVASTAVA

SURFACE-to-Air Missiles are used in an Air Defence Network. The object of Air Defence is to prevent penetration of Air space by enemy aircraft. This would require that the air defence must have suitable sensors to detect, identify, track and intercept enemy aircraft. The attacking aircraft may fly at different altitudes with varying speeds and may have a variety of weapons at its disposal. However, a meaningful attack would have an appropriate weapon system for which speed and altitude of attack by aircraft would have to be decided in the light of the ground defences (for which some intelligence or knowledge may be available) that may be there. To counter the threat at various altitudes and speeds, the air defence system has also to have appropriate weapon systems for a given level of defence (which may be a policy decision).

Modern advances in science and technology have provided a variety of weapon systems for air defence. There are a large number of single, twin and quadruple gun systems (with and without fire control radars) which are current in many advanced countries. There are also surface-to-air missiles for various ranges and it is possible to organise an all missile air defence for the defence of a battle area. From the shoulder-fired missiles covering enemy targets flying at tree top level to very high altitude attacks (above 16000 metres) there are various types of surface-to-air missiles available in the armoury of nations. In this paper all missile air defence would be considered, the role and efficacy of anti-aircraft gun system would be dealt with subsequently.

The attacking aircraft may fly at various altitudes with different speeds. While the altitude classification is given in Table 1, there are three brackets of speed in which a hostile aircraft can carry out its attack. These could be :—

- Low subsonic attacks from 10 to 100 metres per second;

- (b) High subsonic attacks from 100 to 300 metres per second; and
- (c) The supersonic attack from Mach 1 to about Mach 2.3.

TABLE 1
Air Defence System

Type of System (Altitude)	Point Defence Rapid Fire Guns & SAGW	Piloted air Superiority Intercep- tion	Medium & Long Range Missiles	Piloted Intercep- tion Weapon System
(m)				
Very Low (0-500)	G	—	—	—
Low (500-3000)	G	G	P	P
Medium (3000-10,000)	P	G	G	G
High (10,000-16,000)	—	P	G	G
Very High (above 16,000)	—	—	G	P

G = Good capability OPERATE WITHOUT OPERATE WITH

P = Limited capability GROUND ENVIRON- GROUND
MENT ENVIRON

AIR DEFENCE NETWORK

The main components of an air defence network are :—

(a) The ground based search and warning systems.

- (b) Tracking & identification of targets.
- (c) Evaluation of threat.
- (d) Selection of appropriate weapon system including interceptor
 - 1
- (e) Guidance and control of the system to the point of interception.

SEARCH & DETECTION OF TARGETS

Most of the countries have set up elaborate 3-D radars to detect all aircraft penetrating the air space. The coverage of each radar (and there could be more than one at a place) depends upon the target size, speed, altitude and required detection probability. There have to be a number of radars covering a particular border or territory linked with an effective communication and display system.

TRACKING AND IDENTIFICATION OF TARGETS

The tracking of a target is done on the radar. Every radar return in azimuth, elevation and range is correlated to constitute the trajectory of the target. Usually there is a computer in this circuit which keeps track of all targets. Once a track has been established, it has to be identified by the use of IFF. Once an aircraft has been identified as hostile, the centre is altered.

EVALUATION OF THREAT

At each control centre, all tracks are presented on a large electronic board. The operational staff then evaluates the situation. The number of hostile aircraft and their direction of approach is then used to decide what weapons to be used, guns, surface to air missiles or interceptors.

SELECTION OF WEAPON SYSTEMS & GUIDANCE & CONTROL

The choice of weapon system depends on the range and height at which a hostile aircraft is finally identified. If there are already interceptors in the air, they can be directed towards the target or on scramble order given to the nearest air base if there are interceptors available in an appropriate state of readiness. The interceptor has to be guided upto the target and if there are air-to-air missiles, it can be allowed to engage the target. Various types of air-to-air missiles are available for this role.

If however, the hostile aircraft is at a low level and near its objective, the ground defences can be activated to intercept it. The guidance and control has to be provided for all interceptions in air defence network. An example of an Air Defence with various types of SAGWS is shown in Fig. 1.

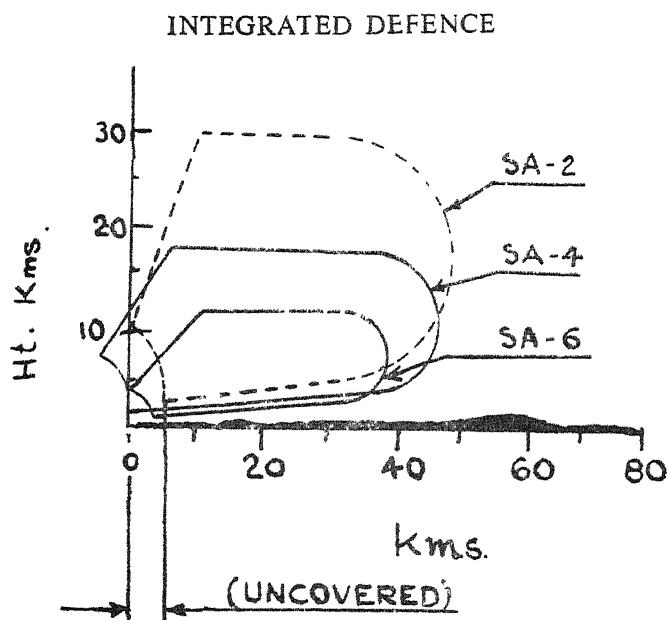


Fig. 1 Overlapping Air Defence in Europe

AIR DEFENCE IN ARAB-ISRAELI WAR

The Arab-Israeli War of Oct 1973 provided some significant revelations of the capabilities and characteristics of modern air defence network. Egyptian Army used a mix of SAM missiles. SAM-2 and SAM-3 provided high and medium altitude cover against attacking aircraft while SAM-6 was used in a mobile role on the front. An air cover from tree top level to 35,000 feet was there in operation. For very low flying aircraft, the soldiers in the forward areas also carried shoulder-fired SA-7, IR-seeking, surface-to-air missile. In addition there was the anti-aircraft artillery battery consisting of ZSU-23, 4-barrel radar controlled guns which provided barrage fired against lo-lo attack.

The result of this missile deployment in air defence was quite amazing in the first week of the warfare. Some of the results are shown in Tables 2 and 3.

TABLE 2
Losses of Israeli Aircraft in 1973 War

Israeli A/c Losses	No. of Sorties	Losses of Aircraft			Battle Loss Rate per 100 Sorties
		During 6-9 Oct	During 10-16 Oct	Total Battle Losses	
Egyptian Front	5442	33	19	52	$\frac{52 \times 100}{5442} = 0.95$
Syrian Front	1830	23	28	51	$\frac{51 \times 100}{1830} = 2.78$

TABLE 3
Losses Attributed to Different Weapons

Israeli A/c Losses	Attributed to							
	ZSU-23- 4 A/A Arty (Shilka)	SAMs	SA 7	Air-to- Air Com- bat	SA-7 or A/A Arty	SAM or A/A Arty	Un- acc- oun- ted for	Total
Actual No. A/c lost	31	41	3	3	3	4	18	103
% of Total Losses	30%	39.8%	2.91%	2.91%	2.91%	3.98%	17%	100%

1. Total Losses = 103 aircraft + 2 helicopters.
2. Losses due to SA-2 and SA-3 were small. These weapons were deployed on the Western Bank of the Suez Canal.

It will be seen from the Table that the losses of Israeli aircraft were attributable mostly to SAM-6 missiles and AA guns. The contribution of SAM-7 (shoulder-fired missile) was rather small (2.9%). SAM-7 was also used against the Egyptian and Syrian aircraft by their own troops because they could not identify the aircraft in the battle-field. These casualties have been estimated to be approximately 15 aircraft, on two fronts as SAM-7 used in the operation did not have any IFF.

HIGH ALTITUDE BOMBING

The modern aircraft can fly very high and with the precision navigation equipment available can certainly reach the target with geographical accuracy. However, high altitude bombing from aircraft is not so effective as the overall aiming and bombing errors are quite considerable. A calculation carried out for the number of bombs/sorties required to destroy 50% of a circular target of radius 100 m shows that as the altitude increases, the number of bombs required for the same level of destruction of a target becomes quite considerable. This is shown in Table 4.

TABLE 4
Inefficacy of High Altitude Bombing

Bombing Altitude (Ft)	CEP (in mtrs.)	No. of Bombs	No. of Sorties
10,000	164	17	4
20,000	393	84	19
30,000	466	118	27
40,000	558	165	37

The results in the Table above have been arrived at by assuming 6 bombs of thousand pound each carried in an average high altitude bombing aircraft. The proportion of 'dud' bombs is assumed to be 1 per cent and the proportion of abortive sorties approximately 20%. Thus high altitude bombing is not very effective so far as military destruction of targets is concerned.

PROFILE OF PROBABLE ATTACK

The attacking aircraft normally chooses an attack profile depending upon the nature of the target, the ground defences and the type of weapon available in the aircraft and its accuracy. In a ground defended area with anti-aircraft guns, the aircraft has to penetrate the air defence, to carry out shallow attacks with rockets and guns or the low level attack with napalm bombs or low drag bombs. The reason it has to fly low is

to escape radar detection as far as possible. In choosing the direction of approach to the target, the aircraft tries to take the maximum advantage of the terrain shielding factors as shown in Figure 2 so that its earlier

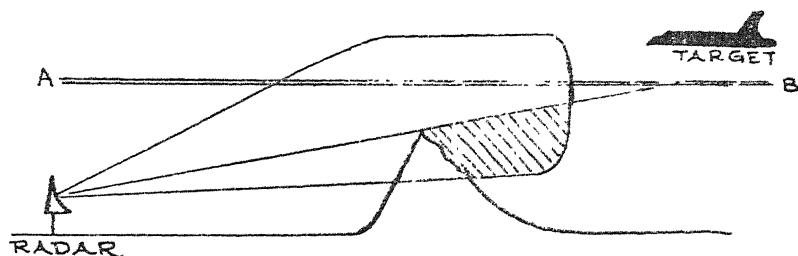


Fig. 2

approach is not detected by the search radars. The preferred profile of attack is thus usually a lo-lo profile and the duration of attack reduced to the barest minimum so that interception from ground is minimum. The choice of profiles is shown in Figure 3.

PROFILE OF PROBABLE ATTACKS IN MISSILE DEFENDED AREA

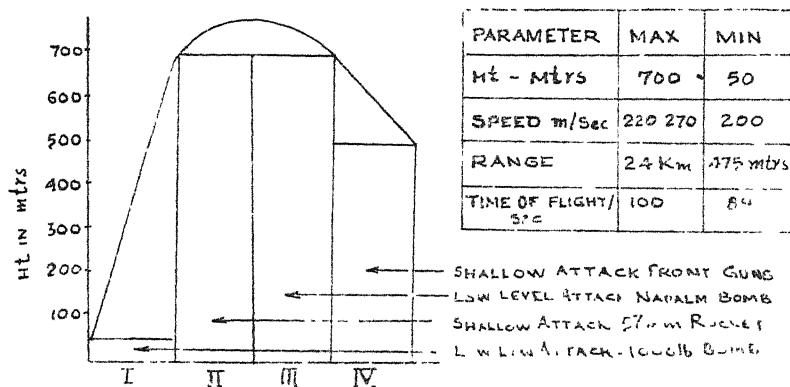


Fig. 3

SHORT RANGE SURFACE-TO-AIR SYSTEMS

The short range systems usually have a slant range of 6 to 10 Kms, and they provide good air defence. The maximum threat to the attack aircraft is posed by the short range surface-to-air missiles. The performance characterising as reflected in the International Defence Review and Directory of Missiles for the available short range SAGWs is given in Table 5.

TABLE 5

Short Range SAGW

Type	Max. Range Kms.	Min Range Kms.	Max. Alt. Kms.	Min. Alt. Mtrs.	Wt. of Missile Kg.	Warhead Kg.
Crotale	8.5	0.5	5	50	80	NA
Roland	6.2	—do—	3	20	65	NA
Rapier	7.0	0.5	3	NA	42.5	NA
SA-8	10.0	NA	6	50	180	**40—50
SA-N4	9.0	2	6	50	14	NA
SA-9	10.0	NA	*3—5	NA	NA	NA
SA-11	20.0	NA	15—16	25	NA	NA

*IDR 6/1975, P. 806.

**Flight 13.11.75, P. 708

A suitable deployment of 2 or more such missiles around an airfield can have more than one intercept on a low flying aircraft. The choice of short range systems should mostly be guided by the reaction time of the system and its minimum range. The smaller the reaction time and lower the minimum range, the better and more effective is the system. SAGWs with long reaction time, even though having a low altitude interception capability, are not likely to be effective against fast flying aircraft in a lo-lo profile.

Suitable deployment of short range systems can provide a certain amount of mutual protection to missile sites as well. However, in a multi-mode attack, the air defence can be saturated and the missile site can become the most likely target, ECM capability of attacking aircraft can further aggravate the situation. Missile sites would therefore need adequate self-defence for their own survival.

Air Defence of ground targets defended by guns and missiles can be considerably affected by electronic counter-measures. If operating frequencies of search systems or missile radars are known, electronic jammers can be effectively used to jam the air defence network. ECM

are almost a pre-requisite if attack against a modern air defence has to achieve some objective. In the Arab-Israeli War, the initial losses of Israeli aircraft were primarily due to the fact that the electronic details of SA-6 missile system were not fully known and which had to be explored. It was only when effective jamming techniques had been deployed that the losses in subsequent weeks were reduced and a number of missile sites destroyed. In a missile defended area, missile sites usually become the primary targets of attack.

MEDIUM AND HIGH RANGE SAGWs

The Medium and high altitude attacks with conventional bombs are more demoralising than effective because of the total bombing errors of the systems. However, these attacks become meaningful if the attacking aircrafts carry nuclear weapons whose lethal range is quite considerable. Against photo reconnaissance flights and intrusions of aircraft, medium and high range SAGWs are very effective. The range characteristics of the medium range SAGWs is shown in Table 6.

TABLE 6
Medium and High Range SAGW

Designation	Max. Range Km.	Min. Range Km.	Max. Alt. Km.	Min. Alt. M.	Wt. Kg.
Improved Hawk	40.0	—	18	30	625
SA-3 (NATO-GOA)	25.0	3.5	18	20	947
SA-6 (NATO-GAINFUL)	24.0	3.5	7	30	60 Warhead Wt.

The medium range systems require a long range warning as the reaction time is generally large unless the systems are kept in operational readiness. The deployment of more than two such systems can provide mutual protection if more than two systems are deployed in an area of the size of an airfield. However, their protection against electronic warfare would be necessary. Multiple mode operation of SAGWs and a certain amount of diversity in the choice of frequency of operation for missile radars and control can give a certain level of anti-ECM capability.

SHOULDER-FIRED MISSILES

The shoulder-fired missile usually works on the infra-red radiation received from the attacking aircraft in a very narrow band. The heat seeking sensor in the missile is mostly actuated by a receding aircraft

when radiation emitted is maximum, than by the approaching mode of the attacking aircraft. Efforts are being made to improve the sensitivity for this mode but the probability of hit is small. The greatest drawback in these systems is that there is hardly any mechanism to distinguish between friend and foe. As a result both the Israeli and Syrian troops shot down a number of their own aircraft in the battle-field. Shoulder-fired missiles in the battle zone do present certain risks and can be used only in the presence of an effective command, control and communication system (C³). Some of the very short range surface-to-air missile systems are given in Table 7.

TABLE 7
Very Short Range SAGW

System	Max. Range Km.	Max. Alt. Mtrs.	Min. Alt. Mtrs.	Wt. in Kg.
1. Redeye	3.4	2500	NA	8.2
2. RBS-70	5.0	3000	NA	15.0
3. Blowpipe	3.0	1500	NA	NA
4. SA-7 (NATO-GRAIL)	3.6	1500	45	10.0

ALL MISSILE DEFENCE BY AIR FORCE

With the developments in the technology of very short range systems, it is possible to organise air defence made up of missile units only. The air defence of airfields and many other complexes is usually made up of missile units manned by Air Force and anti-aircraft guns manned by Army. The dual set up creates a certain amount of duplication and also a problem for command and control. There are always far too many men involved in the operations than are actually needed for a good and efficient air defence if it were a single service management. The cost-effectiveness of this dual operations has seldom been analysed but should certainly be in favour of a single service control for a required level of air defence. All missile defence could offer one such solution in respect of airfields, radar complexed and other areas at present manned by two Services in the air defence network.

DESIRABILITY OF DEVELOPING A NEW SHORT RANGE SAGW

It can be assumed that the low level threat of enemy attack will continue for many more years because of the relatively poor detection

ranges of radars. A new weapon system having better low altitude capability and lesser reaction time may be necessary to develop for the future.

The low level surface-to-air guided weapon system which should be developed to meet the future threat from modern aircraft should have the following broad characteristics :—

- (a) Organic Surveillance system based on pulse doppler radar.
- (b) An efficient IFF integral with the system.
- (c) A reaction time of about 6 to 8 seconds with good multiple target handling capability.
- (d) Range coverage upto 18 Kms with as small a dead zone as possible and height coverage from 15-50 mtrs upto 10 Kms.
- (e) A high kill probability in the volume of action and ability to attack both approaching and crossing targets at supersonic speeds in presence of electronic jamming.
- (f) Flexibility for employment both by the Army and Navy in Air Defence role.
- (g) Good ECM capability built into the system.

CONCLUSIONS

Details of available SAGW systems for various altitudes is given in Appendix I. Modern attack aircraft carry a lot of ECM equipment and have the capability to reach a target with geographical accuracy flying very low. Most of the Russian SAGW systems have been exposed in Arab-Israeli War and to that extent they are vulnerable. A new system of SAGW capable of meeting futuristic threats and effective enough at low level is well indicated for Indian Air Defence. The infra-structure in the country and relative absence of tension in the region is quite conducive for such a development in the country.

ACKNOWLEDGEMENT

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SURFACE TO AIR GUIDED MISSILES
C H A R A C T E R I S T I C S

U.S.I. JOURNAL

Altitude	SAM System	Range in Km				Height m Min Max	Weight Kg Missile Warhead	Reaction Time Sec.	Guidance	Remarks
		Min	Max	Min	Max					
Low altitude (Portable System)										
Blow pipe	—	3.0	—	1500	*11	2.2		I.R. Autogathering then CLOS	Can attack oncoming and receding targets.	
Red eye	—	3.4	—	2500	15.2	—		I.R. Homing optical		
RBS-70	—	5.0	0	3000	15(22)**	1.0		Laser beam-rider	Immune to jamming	
Stinger	—	—	—	—	—	13.5	—	I.R. homing	Successor to Red-eye also known as Redeye II all aspect.	
Chaparral	—	3+	—	—	—	84	5	I.R. homing optical aiming	Vehicle mounted possible replacement Roland II.	
SA-7	—	3.6	45	1500	9.2	2.5		I.R. Homing	Russian equivalent of Redeye.	
Low altitude (Mounted System)										
Crotale	0.5	8.5	50	3600	85.1	15	6	I.R. auto, then beam rider with X-band command T.V. back up for low level.	All weather, automatic short range system.	
Roland	0.26	6.2	20	3000	63	6.5		I.R. auto, then SACLOS—optical (Roland I) or Radar (Roland II).	Low level forward area air defence system. Radar range 15—18 Km.	
Indigo—MEI	1	10	15	5000	120	21	6	Radar beam rider+ SACLOS Command or SACLOS	S.S.K.P=0.5	
Rapier	0.5	7.0	0	3000	42.5	0.5	7+3	SACLOS (Blind fire attachment developed) defence against fast (Mach 1+) maneouvring target	Ultra low level	
Seacat/ Tigercat	—	5	—	—	63-68			CLOS (TV Auto)	Darkfire and blind fire capability.	

Altitude	SAM System	Range in Km		Height in Km	Weight Kg	Reaction Time Sec:	Guidance	Basic Point Defence System.	Remarks
		Min	Max	Min	Max	Missile	Warhead		
Medium Altitude 10-20 Km	Seasparrow	< 1	< 18	—	—	205	30	C.W. SAR	
	Tartar	—	16+	300	12,000	680	—	SAR	No longer in production being replaced by standard.
	Seaslug MK 2	—	45	—	15,000	?	—	Beamrider	First generation area defence.
	Terrier	—	35	—	20,000	1,350	—	Cruise-beamrider attack-SAR	To be replaced by standard.
	Hawk	—	30	30	12,000	584	C 45	CW. SAR	—
	Improved Hawk	—	40	30	18,000	625	54+	C.W. SAR	Has greater range and protection against ECM.
	Standard MR	—	20	—	20,000	C.590	—	SAR	Shipborne to replace Tartar.
SAM-D	NA	NA	NA	NA	NA	NA	—	SAR+Command	Advanced Weapon System to replace Hawk and Nike Hercules Equivalent to Hawk.
SA-3	—	25-30	20-50	10,000	400	—	—	30.5	Radio Command+ Homing Command+SAR
SA-6	3.5	24	30	—15,000	550	60	—	—	Homing Radar-guided
*SA-11	—	20	80 ft	—18,000	50,000 ft	—	—	—	—
High Altitude Masurka MK 2 above 20 Km	—	30(Mod 2) 45(Mod 3)	30	23,000	2080	80-120	—	Mod 2 Command SAR	Shipborne.
	Sea Dart	—	80+	—	25,000	550	—	Mod 3 SAR	Shipborne area defence
	Talos	—	120	—	26,500	3,175	—	Cruise beamrider attack-SAR	Long range shipborne
	Nike Hercules	30	150	6,000	30,000	4,800	—	Radar Command SAR	Being phased out.
	Standard ER	—	55	—	20,000	C 1080	—	SAR	To supersede Terrier
	Bloodhound	—	80+	—	—	—	—	—	Long range air defence system against high flying targets.
	MK 2	—	80+	—	—	—	—	SAR	Similar in operation to blood hound
Thunderbind	—	40-50	500	27,000	C. 2,300	130	2 Mts	Radio Command	Prone to ECM
SA 2	—	*System weight		SAR = Semiactive Radar		CLOS = Command to line of sight		SACLOS = Semi-automatic command to line of sight	
		**Missile wt in container							
		*A.W.26.3.79, p 11							

Resurgence of Afloat Air

CDR V KOITHARA, IN

IN 1966, where the British Labour government scrubbed the plans for the new 56,000 ton carrier for the Royal Navy and announced that the existing carriers will not be replaced, many nodded assent at what they considered was the unlamented demise of the aircraft carrying ship. The missile, they felt, had rendered the aircraft unnecessary over the sea and what was more had made the mother ship highly vulnerable. The sea would soon be dominated by small missile carrying ships and submarines, while the expensive, gargantuan carrier (many could not conceive of it in any other form) joined the battlewagon as a maritime dinosaur.

About two decades have passed since such dire predictions first began to be made. The fact that the number of aircraft at sea has nearly doubled (from 1000 to 1800) and the number of ships carrying aircraft has gone up by about 20 times (35 to 700) since then has not quite killed the shopsoiled image of the aircraft carrying ship as an expensive, vulnerable leviathan. Witness the strong doubts expressed in certain quarters about the wisdom of the recent government decision to re-equip the Vikrant with Sea Harriers.

The aircraft carrier was riding high when World War II ended. In the Atlantic it had shown itself as an extremely effective escort unit, both in the anti-submarine and anti-aircraft role, while in the Pacific it had also proved itself as a most potent strike unit against ships as well as shore targets. In the straitened financial conditions of the immediate post war years, these factors however receded into the background and what stood out was the seemingly prohibitive cost of the vessel. At the same time the American decision to use the carrier as a platform for nuclear strike led to the construction of bigger and bigger vessels optimised in that role. The emphasis on strike role inevitably led to the denuding of self defence capabilities of these ships, particularly in the ASW field, and consequently they also required a substantial screening force to protect them at sea.

It was not surprising therefore, that the carrier soon began to be considered as a superpower weapon, inextricably linked to the task force concept. The attempts of some of the smaller navies to use their carriers

in the ASW and command roles were also not found cost-effective because of non-optimal design. The Soviet Navy's steadfast abjuration of carrier construction those days and the emphasis on SSM equipped frigates also helped to swell the doubter's ranks. The Russians appeared to deliberately foster the impression that the carrier was highly vulnerable to missile equipped ships and shorebased aircraft. The fact that of some 30 carriers which went down during World War II only a solitary one was accounted for by shorebased aircraft and surface ships, was brushed aside in the dazzle and uncertainty created by the missile.

The Americans of course disregarded such views and commissioned 14 attack carriers since the war, including three nuclear propelled ones. The French also built two new attack carriers during 1961-63, in addition to a helicopter carrier. The British had completed five carriers during the fifties on hulls which were laid down during the war, but thereafter, with the nation entering economic doldrums, they decided to rely on their American connexion and not build any more till better times prevailed. In fact the integration of their maritime forces with the United States at this time led to not only Britain but all NATO countries and their Pacific allies like Australia and New Zealand developing their navies on complementary rather self contained lines. As a consequence while there was a rapid proliferation of helicopter carrying ships, none of these countries except Canada and Australia went in for full fledged carriers.

This apparent non-affordability of the carrier even by affluent Western European nations and its stereotyped image as vulnerable except in a highly protected task force configuration led to countries like Spain, Brazil, Argentina and India being strongly criticised when they went in for carriers during the fifties. Many genuinely felt that such outdated, hand-me-down carriers served no purpose other than giving delusions of grandeur and diverting scarce resources from far more urgently required small ships and submarines. Such critics soon received a not-unexpected boost from the believers in the unity of airpower who generally tended to gloss over the highly specialized nature of maritime air operations and its close integration with surface and sub-surface operations.

There was undoubtedly merit in the view that the carriers acquired by these countries were not the best suited for their operational needs. But on the other hand, considering the bargain prices at which these ships were obtained, they were certainly value for money in laying the foundations of effective fleet air arms in the recipient countries. What many failed to appreciate at that time was that naval air power was not going to stay constrained within the highly expensive concept of the attack

carrier, but was going to branch out and proliferate into a number of productive and cost-effective applications. A carrier like Vikrant was, therefore, not destined to become an operationally emasculated status symbol, to be flogged till it fell apart and with a replacement out of the question because of prohibitive cost. Instead it would serve to create the highly trained infrastructure of operators and technicians who would prove to be a priceless asset in the new era when virtually every ship of frigate size and above would have its integral aviation element.

What are the reasons for the world wide trend towards increased aviation exploitation at sea? Why is it that the Soviet Union after deriding carriers for two decades went in for helicopter carriers in the late sixties and have now gone in for full fledged carriers operating fixed wing aircraft? Why is the United Kingdom resuming carrier construction after a hiatus of twenty years? And, most to the point, why has the helicopter become virtually standard equipment for every new warship?

The reasons of course are several and encompass both strategic and technical considerations. The jettisoning of the idea that a short duration nuclear exchange was the only possible superpower conflict scenario led to renewed interest on non-nuclear maritime operations and consequent development of weapons suited for such situations. At the same time there has been greater appreciation of the navy's use in threshold situations, both in the high-profile deterrent role and in the low-risk interventionist role. Finally the rich possibilities offered by marine and sea bed resources and the establishment of exclusive economic zones have led to a precipitate awakening of the maritime consciousness of countries, many of which had hitherto regarded their navies as primarily ornamental. The fact that integral air greatly enhanced the power and reach of even small vessels in a wide spectrum of conflict situations was not lost upon the naval staff as they moulded their hardware to meet the changing situation.

Strategic and technological considerations invariably interact. The technological developments which have led to the recent resurgence of afloat air are therefore significant. The initial impetus came in the ASW field. The ship-borne helicopter proved to be an excellent means of extending weapon delivery range in what was becoming an increasingly unequal contest against the submarine. Helicopter monitored sonobuoys and later the dunking sonar introduced a further qualitative change, as it made the helicopter a self contained search and strike unit, which with its substantial edge in speed could cover a much wider area than the ship on which it roosted. Moreover, unlike the mothership, the helicopter was almost invulnerable to the counter attacks of the lurking submarine.

The first generation search and attack helicopters like the French Superfrelon (13,000 Kg) and the British Westland Seaking (9,525 Kg) were quite large and one needed a platform of about 3500 tons to accommodate even one of them. But the second generation craft now rolling out are lighter and more compact. The Westland Lynx for example weighs only 4763 Kg and can be accommodated in hulls as small as 1500 tons, or alternately two or three of them can be carried on board large frigates. Similarly the Augusta AB 212 ASW helo, although not as versatile as the Lynx will be carried on board the 1000 tons corvette designed for the Italian Navy by Cantieri Navali Riunite. Improved rotordynamics through refinement of rotorblade and hub design, fuel efficient engines, low vibration airframes to reduce stress on components and miniaturised and modular avionics have all contributed to produce these light weight high payload, increased-time-on-task helicopters with excellent performance at sea.

Other subsidiary developments have also helped the march of the ASW helicopter. Digital data links between aircraft and between ship and aircraft, together with computerised real time data-processing now enable helicopters to hunt submarines with a precision, speed and control which they could not hope to earlier. Similarly considerable advances have been made in the techniques of recovering and moving helicopters on the tossing decks of small ships, thereby ensuring their exploitation at sea even in adverse weather conditions.

The spurt given to afloat aviation by the advances in the ASW field was soon augmented by developments in the tactical missile field. This in a way was ironic because many had forecast that the shipborne missile would make the shipborne aircraft redundant. Helicopters were first brought into the missile field by the Soviets in the early sixties as a means of providing mid course correction to their over-the-horizon, surface to surface missile. But it soon dawned on naval technologists that the craft could be exploited to even greater advantage in the missile defence field. This was the period in the late sixties when everyone was highly concerned about combating the threat posed to larger ships by SSM carrying small craft. The SSM enabled a 150 ton high speed boat to threaten a frigate twenty times its size and cost. Even if the frigate had SSMs, the situation did not materially change, for David had the same effective firing range as Goliath with the added advantage of higher speed and smaller radar profile.

An obvious answer to the problem was the shipborne helicopter. Firstly it could be used to project visual and electronic surveillance far out into the threatened sector. Secondly it can be made to carry ECM

packages which could interfere with the guidance system missiles. Finally it could be fitted with an air to surface missile, thus enabling it to attack the SSM equipped small craft. Initially these were wireguided missiles modelled after antitank missiles. But now there are stand off ASMs like the Exocet AM-39 which can be launched at the target at a distance of 52 Kms from a Sea King or Superfrelon flying at 330 feet.

The helicopter has now established itself as a strong ally of the surface ship in the ASW, electronic warfare and anti-missile-boat fields. The trend is also to provide the full spectrum of capabilities in the same helicopter, by providing interchangeable weapon and sensor packages.

The LAMPS (light airborns multipurpose system) programme of the US Navy is the prime example of this. The Lamps III helo, Shikorsky SH-60B, which will be operational in the early 80s will have ASW, EW and ASM capabilities.

While these advances were taking place in the shipborne rotary-wing field, efforts had also been going on in developing a fixed wing aircraft which could be operated from small ships. The development of VTOL aircraft operating on the principle of vectored thrust made it possible for the first time to operate high speed, fixed wing aircraft at sea from platforms much smaller than conventional carriers and without the aid of catapults and arrester gear.

With its higher speed the VTOL fighter was a much more potent strike unit against SSM equipped ships than helos. It also had interception capability against aircraft which the helos lacked. In the early 70s (even earlier in the Soviet Navy) the stand off ASM had made its debut and this suddenly turned the lumbering maritime recce aircraft into a dreaded predator. Until then ships only feared high speed strike aircraft, whose limited endurance and navigation/surveillance capability made them a serious threat only close to the coast. But the MR aircraft with its considerable radius of operation (2500 Kms plus) and surveillance range was a different proposition altogether, once the long range ASM enabled it to strike from stand off range. The vastness of the ocean no longer provided a sanctuary from aerial threat.

Longer range SAMs, even when developed, would provide only an unsatisfactory answer since one would still be putting an expensive ship against a much cheaper aircraft. The obvious foil against these ASM fitted patrol aircraft (and against SSM fitted surface vessels) was a shipborne VTOL fighter which could go out and attack them outside

their weapon delivery range. Even though at present they lack the speed, range and payload of a conventional fighter, they are still potent enough to take on a missile boat or a patrol aircraft. The Yak-36 Forger is already at sea on board the Soviet Kiev class carriers while the Sea Harrier would follow on board the Hermes and the Invincible class through deck cruisers next year.

Yak-36 Forger is a successor to the Freehand experimental VTOL aircraft developed by Yakolovich group in the late sixties. Weighing 10000 Kg it has a maximum level speed of Mach 1.3. The Sea Harrier is basically the same aircraft as the Harrier which has been operational with the RAF and the US Marine Corps since 1968. Its avionics are however much better and particularly the Blue Fox radar gives it excellent air to air and air to surface detection capability. With a maximum level speed of 640 Kts, it can attain Mach 1.3 in dive. It has an effective interception/strike range of 100 M plus in the VTOL mode and 200 M plus in the STOL mode. Apart from a pair of 30 mm Aden guns, it can carry in different configurations air to air missiles, rockets and bombs and eventually air to surface missiles as well.

A recent innovation which promises to substantially improve the STOL performance of this genre of aircraft in the Skijump. Invented by Lt Cdr Taylor of the Royal Navy, the Skijump is essentially an upward curving runway imparting a semi-ballistic upward trajectory to the aircraft. Angles upto 20° are being investigated and it has been established that the Skijump will significantly improve the range/payload in the STOL mode. A 6 degree skijump is being fitted on board the Invincible and 15 degrees Skijumps on board the two later ships of the class.

The VTOL fighter today has certainly not got the performance of a conventional fighter although the Skijump has reduced the gap considerably. The requirement of taking off using thrust as opposed to aerofoil lift will inevitably result in higher fuel consumption and consequent reduction in range and/or payload. But the assumption that design features like large intakes necessary for vertical take offs will militate against high speeds may not prove true in the long run. The AV-16A Advanced Harrier programme of McDonnell Douglas is expected to double the payload/range of the Harrier and make it supersonic in level flight. Similarly the DFV-12 Thrust Augmented Wing aircraft being developed by Rockwell is expected to have Mach 2 performance. Further what the VTOL aircraft may lack in sheer speed may be made up by better manoeuvrability through thrust vectoring in forward flight (known as VIFFING) as has already been demonstrated by the Harrier in mock

combat with aircraft like F4 Phantom. Even the problem of Short range may eventually be solved through inflight refuelling. It is a pointer that even today, with a single inflight refuelling, the Harrier has an endurance of 7 hours and a range of 3450 miles.

In any case, viewed in the context of the tactical use of VTOL aircraft at sea, matching performance with conventional fighters is not critical in most situations. Most navies do not intend to use VTOL aircraft as air superiority fighters against conventional aircraft or for shore strikes against heavily defended targets. For such roles it may still be preferable to use conventional carriers and aircraft; the US Navy seem to have discarded their 15000 ton VTOL aircraft equipped Sea Control Ship design for the moment and have gone in for a 50000 ton conventional carrier design in their quest for a cheaper alternative to the 91,400 ton behemoths of the Hinnit class. But for the purposes for which most navies intend to use VTOL aircraft, ie against surface combatants, helicopters, patrol' aircrafts, moderately defended shore targets etc, even a transonic fighter is adequate particularly if equipped with stand off missiles.

The vital question therefore may not be so much as to how closely the VTOL fighter can match the performance of the conventional fighter, but from how small a size of ship can they be usefully operated from. Theoretically a VTOL aircraft can be operated from a pad of about 60' x 40' which can be provided in a ship of about 4000 tons. In fact the Harrier has already been operated from the deck of the 4700 ton Japanese frigate, Haruna. But whether it would be operationally cost effective to carry a single fighter on board such ships and that too without being able to operate in the STOL mode is another matter. The trend today is to carry VTOL aircraft on slightly larger ships which can take a reasonable number of aircraft and will also permit short take-offs and landings.

The Invincible class though deck cruisers, three of which are planned to be commissioned in the Royal Navy during 1980-84, displace 19,500 ton full load (the same as Indian Navy's Vikrant) and can carry 13 to 16 Sea Harriers and Seakings, depending on the mix. The Italian design of Giuseppe Garibaldi is smaller at 12,000 tons and is designed to take about 10 to 12 aircraft. Spain is also considering a similar vessel, probably to be named Canarias, which follows the design of the Sea Control Ship given up for the present by the US Navy.

It appears, therefore, that by the late eighties there would be a number of mini-carriers, displacing about 12,000 to 20,000 tons and carrying about 10 to 20 aircraft. These ships will not be prohibitively expensive like the US Super Carriers. The final bill of the Invincible is

going to be about Rs. 230 crores, which while not inconsiderable, is certainly a far cry from the Rs. 2400 crores of the 91,400 ton Carl Vinson now under construction for the US Navy. A 12,000 ton sea control ship should not cost at the most more than about Rs. 150 crores at present prices, which is no more than the cost of three medium sized frigates and therefore within the reach of many small navies.

Such a vessel carrying a mixed bag of about a dozen VTOL fighters and ASW/EW helos will be a significant force in any maritime conflict scenario between small navies. She will have very considerable self protection capability against aircraft, submarines and SSM vessels and will not therefore require a large screening force of escort ships. On the other hand she will provide substantial protection against ASM fitted patrol aircraft and SSM fitted small vessels to the ships accompanying her. She will also make a vast contribution to the electronic warfare prowess of the task force.

While the VTOL aircraft is unlikely to be carried in ships smaller than about 10,000 tons, the helicopter is undoubtedly going to be carried in more and more small ships. It is likely that virtually every ship above 1500 tons will have a helo, while many smaller ones will probably have landing pads and refuelling arrangements. Similarly, while ASW may continue to remain the primary function, more and more shipborne helos are likely to be used for electronic warfare, early warning and ASM carrying roles, thereby increasing the effectiveness of the mother ship in several directions.

The helicopter and to a lesser extent the VTOL aircraft have led to a tremendous proliferation of aircraft in the fleets of the world. Engineering advances resulting in continual improvement of the performance/size ratio of shipborne aircraft, interchangeable weapon and sensor fits making for versatility, and digital action data processing leading to the aircraft performing almost like an extended limit of the ship are all contributing to this phenomenon. In the long run perhaps, advanced PGMs like the Tomahawk Cruise missile backed up by a global satellite surveillance and communication system may take over some of the currently envisaged tasks of shipborne aircraft. But such technological scenarios appear distant even for the superpowers and as far as one can reasonably see, the horizon appears bullish for afloat aviation.

Command Concepts

BRIGADIER NSI NARAHARI

THE 'whole' is greater than the sum of the individual. To achieve this a catalytic agency is required. In the armed forces this agency is a commander. The commanders at all levels function with resources both human and material. Their influence on the latter is limited to ensuring their timely provisioning, economic use and maintenance especially at the level of division and below. It is an important command function. However, the technicalities of this command function are determinate and less complicated than the command functions related to human resources. The aim of this article is to analyse the complicacies of this command function in a changing environment.

Armed forces all over the world have developed concepts of command, the basic principles of which are generally the same. However, in the detailed application there would be variations depending upon the characteristics of the peoples of the countries, and the socio-economic environment prevailing at the time. Indian army command concepts have their basis on the practices followed by the British during the pre-independence era. Some changes have taken place during the past three decades more by trial and error than by study. There is a need to modify our command practices to an extent justified by the changed circumstances after due analysis.

COMMAND TECHNIQUES

Essential elements of command are 'command responsibility', 'command authority' and 'command guidance'. The scope of each of these elements is discussed in the succeeding paragraphs.

COMMAND RESPONSIBILITY

This is a unique feature of command in the armed forces. Responsibility of a commander is total for the success or failure of his command. He is responsible for the effective and efficient functioning of his command. This responsibility is neither shared nor delegated. However, each level of command in the hierarchy has with it certain

responsibility and accountability. We should, therefore, understand the principle of 'Differential accountability'. Let us take the example of a battalion. The battalion commander has the overall responsibility for its operational and administrative efficiency. This does not, however, absolve the responsibility of a company commander or even a section commander for the functions expected at his level of command. The tendency to hold the unit commander directly responsible for 'rights' and 'wrongs' done at the lowest level, gets unit commander involved in detailed functions of his sub unit commanders thus curbing their initiative and output leading to over centralisation. If several mistakes or wrongs of a similar type occur in a unit then naturally it points to improper direction, guidance and supervision which is the function of the unit commander for which he should be held responsible. Similar analogy holds good higher up the command structure and it is essential to remember this aspect of command responsibility.

Command Authority. This is the authority vested on a commander to carry out his command functions. Authority should be delegated appropriately to the various commanders and staff under command. This will facilitate junior commanders in carrying out the functions of their command, relieves the senior commander of details and builds up initiative and confidence in the junior commander. Battlefields now have become extended due to better signal communications, longer range of weapons and improved mobility of the armed forces. Commanders on the spot will have to take appropriate decisions based on the level of their command without constantly looking over their shoulders. Over centralization of authority during peace time will have disastrous results during war. Over-centralization is the outcome of a fear complex—a fear of being held directly responsible for all actions of the command. In our army we preach thinking "Two down" but in practice we see most of the commanders acting many rungs down their level. Commanders at all levels should not only get into the habit of appropriate delegation of authority and they should also understand where the delegation ends and the responsibility starts.

Command Guidance. This is an important function of command and it involves issue of directions/instructions — written or verbal, timely advice and supervision. Directions must be clear and unequivocal. The commander must take into account the resources and capabilities before giving directions. Conditions in our army are fairly well settled and commanders at various level have the necessary training and experience. They have not catapulted into their present ranks and there should be no problem in issuing clear and workable directions. If there is a weakness in this, it is due to weakness in communication which will be dealt with

later in this article. The pitfalls in command are really in the advisory and supervisory functions. Commanders — many of them suffering from LMG syndrome, tend to over do, thus leaving very little room for the subordinate commander's initiative and original thinking. I am not, however, advocating the other end of the spectrum ie under-doing advice and supervision. Timely checks and balances are necessary to see that the command directions are being followed and where they are not being followed due either to lack of understanding or due to carelessness, timely advice and "rap on the knuckle" would be necessary. Commanders will have to be firm about taking corrective action.

COMMUNICATION

Communication is the technique of "putting it across" along the chain of command and laterally amongst staff. Communication to be meaningful should be two way and should not be inhibited by either an ACR syndrome or a father-son complex. Command is direct to the span of command and a commander should not find it difficult to communicate to his immediate subordinates. Communication 'gap' problems arise when a commander wants to communicate beyond the span of command. This is normally overcome either through informal talks/lectures or informally on social occasions. In either case, it is upto the senior commanders to avoid talking 'down' to the juniors but talking 'with' the juniors and also permit free expression of ideas. This is positively a grey area in our military environment. Senior commanders feel that any expression of views/ideas contrary to their own, is dogmatic and argumentative. The subordinate commanders in their turn — with the ACR sword hanging over their heads by the proverbial hair, tend to become 'yes' men and only say things which are palatable to their boss man. Some of our conferences become monologues ie instead of a two way communication they turn out to be verbal briefing/orders. There is a need to open up less inhibited two way communication process, and the ball must first be played by the senior officers.

SOCIAL STRUCTURE

Bulk of our men used to be recruited from rural areas and many of them especially from the North were joining the Army by family tradition. Rural economic levels were not high, education levels were pretty low and job opportunities in rural areas negligible. Social upheavals had not touched the rural areas. The raw material therefore was simple, enduringly tough and less demanding. All these are changing at a fast pace now. We are getting more and more men from urban and semi urban areas and they are more educated. Transistor has brought in

better communication and increased awareness of the individual to his surroundings. Job opportunities have increased manifold and so has the individual's wants. The clarion call for democratic rights have reached all parts of the country and there is a definite decline in the social discipline from where the raw material for the Army is coming. Privileges have taken priority over duties. These factors have to effect the individuals joining the Army and will have effect on our command concepts. The individual is capable of analysing and questioning, and commanders at any level should not take the men for granted. Maintenance of traditional military discipline has become more difficult. More than ever maintenance of personal standards by commanders is getting important and they must be prepared to explain the 'whys' and 'hows' of their orders and actions. The OR is bound to expect to be treated during off parade hours as his civilian counterparts are being treated. This has already come into effect in some of the other armies. Some liberalization has taken place in our army by way of improving standards of JCOs/OR family accommodation, increased quotas of CILQ and so on. Areas where further improvement can take place are with reference to OR's on and off parade dress, better conditions of travel in railway compartments reserved for military personnel, greater inhibition in using OR in non-military work (working parties) and so on.

MOTIVATION

Volumes have been written about motivation after study and research. In its practical application a leader or a commander has to face different situations in war and peace. Motivation during a short duration war has to be built up on solid foundation of peace time motivation. Latter is hard to build up purely on the traditional factors like the Regiment and the family traditions, cause and so on. While these still have effects on motivating a soldier, I believe, these are nebulous factors for a peace time soldier who is probably trying for the satisfaction of his physical, social and ego levels in that order. Firstly he looks for material financial benefits which not only satisfy his material wants but also helps him to stay at a reasonable social level vis-a-vis his civilian counterparts. Commanders at sub unit, unit and formation levels have very little to do directly to satisfy this aspect of his motivation since a soldier's emoluments are controlled by the government in power. However, within his field of activity, a commander can contribute to this physical and social aspect by seeing that the men get their due share in time, look after their creature comforts by proper administrative management and providing necessary educational and professional training to give adequate scope for a soldier to improve his prospects for promotion. Commanders at all

levels in the Indian Army till now have had a happy tradition of doing these things and we should keep it up. However, we have to modify our thinking on the second aspect ie the ego satisfaction of an individual soldier. Modern soldier is no more an automat. He is more educated, more informed than his predecessors and is more inclined towards self improvement. The individual training should be progressive and a continuous challenge to his intelligence and capabilities. His standards at any time should be quantified and notified to him as a challenge for further improvement. Greater weightage should be given for performance rating than seniority while selecting men for promotion cadre and adjusting order of seniority based on quantified performance. Junior leaders should be given greater freedom to plan and execute tasks allotted to them instead of being told what to do, how to do and then followed by close supervision. By this, the junior leaders get greater job satisfaction which helps to build up their ego. In a democratic state a soldier should rather have a 'feel' of the cause than to be told about it.

CONCLUSION

While the basic concepts of command have not changed, due to environmental changes, wants, aspirations and reactions of the human being making up the command structure, changes. This calls for a progressive reappraisal of the application of the principles of command. War calls in for a supreme effort and sacrifice by a human being in a high intensity, short duration war and commanders at all levels in peace time must prepare their command for this ultimate test.

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The Art of Leadership Man- management and Officer-Man Relationship in Armed Forces

MAJOR KK DOGRA, PSC

INTRODUCTION

During the course of the last quarter of this century sweeping changes have overtaken the country. Rapid technological advance, spread of literacy and the general climate of a welfare state have changed the people's attitude towards life. So far as the Indian soldier is concerned, an awareness of his rights as a citizen has to some extent diluted his sense of duty which the guileless soldier recruited from the agricultural stock in the first half of the century was credited with. Mass media of communications such as radio the cinema and the press have brought the sophistication of western civilization into the nation. The advent of sophisticated weapon system has brought in its wake specialization and the Armed Forces today need educated and thinking officers and men.

Material wants are increasing fast. Rising prices, gradual break up of the age-old joint family system, prolonged spells of field service leading to continued separation from families, all create domestic problems for the men. The environment makes the soldier far more intractable than his predecessors of yester years. Men of such moment, coming as they do from a free and democratic society, are bound to place complex and challenging demands on military leadership. A further dimension is added to the question by the changing socio-economic environments which have led the soldier to acquire new values. The officers and men would like to have much more latitude to express their personal views on many matters and take part in decision-making process. There will be resistance to toe the official line 'blindly', they would like to be convinced of its intrinsic merit.

In the light of the foregoing a reappraisal of our concepts of man-management, leadership and officer-man relationship in the present military environment is a sine qua non, in an effective, scientific military organisation.

Despite the emergence of push-button technology, it is still the man behind the button that matters. In an ever-increasing array of sophisticated weapon systems, it is the spirit of man which gives effectiveness to military organisation and symbolises the confidence in each other of officers and men: those enduring characteristics, loyalty and courage, still rule the roost. The practice of good man-management, leadership and good officer-man relationship in war remain the artful repertoire, and like all arts, whatever their variations, will have their enduring principles. Many men skilled, either with sword or pen, and sometimes with both, have tried to expound these principles which will keep on applying with little variations whatever the environment. In short, environmental changes demand from military leadership *savoir-faire* and other qualities in a large measure.

THE CURRENT SOCIO-ECONOMIC CHANGES AND THEIR IMPACT ON ARMED FORCES

BEFORE we enter our actual exercise it is of paramount importance to understand the current political and socio-economic forces at work in the country. These forces propel the minds of the masses who constitute the source of manpower for the armed forces and naturally cannot but affect the attitudes, opinions, behaviour and psychology of the constituents of the armed forces. Two hundred years of colonial rule ended 32 years ago, making the start of a great social revolution. The social changes may not have completely brought about social justice, but they certainly have created an awakening among the masses of their rights. The country has also made considerable progress in the scientific and industrial fields, and any Indian would reflect with pride on the breakthrough in the atomic research which has been achieved at last. However, in the face of the compulsions of economic hardships, unemployment and political parochialism the phenomenal progress made in these fields seems to have either gone unheralded or receded into the background.

The masses have certainly realised their potential and are assertive of their rights and privileges but the sad commentary is that few recognise their responsibilities. The standards of responsibility and discipline in all walks of national life seem to have degenerated. Economic hardships, rising prices, unemployment and social insecurity have further added to the people's hardship.

In more than one sense, our educational institutions are the fountain heads of knowledge, it is not unnatural to expect that radical changes tend to initially manifest there. These institutions have completely been weighed down by the economic, social and political pressures. One hears of cleavage and even of hostility developing between students and staff

of the faculty of the universities. Mass scale copying and flagrant violation of the rules and regulation by the students seem to be the order of the day. We in the military environment would do well to take a serious note of this change as all our manpower comes to us after having been processed and conditioned by such institutions. It is well to consider what motivates the younger generation to behave as it does. It has greater ego, lesser patience and more self-assurance. Many of the younger generation feel that they are the repository of new ideas, and at the same time they also worry about their career prospects and resettlement after service in the armed forces. An average young man today seems to be lacking in a sense of pride in his country. It is therefore, vitally necessary that something must be done to bring his patriotism to the fore. Strength of character is another vulnerable area where much needs to be done. There seems to be a "Crisis of character" in the nation as Ex-President VV Giri used to put it. Everything must be done to ensure that the country would be placed before self instead of the reverse that is happening now. Admittedly food is, short supply in unemployment rampant, inflation eating into the vitals, all leading to social unrest. However, student strikes, labour agitations, lock-outs and so forth could more easily be traced to corruption, inefficiency and dissatisfaction. There can be no doubt that a deep transformation has taken place among the traditionally patient Indian multitudes. They are showing much impatience and are in no mood to put up with ineffective leadership. This naturally percolates to the men in uniform and unless army officers grasp this situation firmly they cannot be effective. This calls for new standards and attitudes on their parts to keep pace with such socio-psychological changes.

However, every cloud has a silver lining. Amidst deteriorating moral values and a diminishing sense of responsibility we have successfully demonstrated to the world that crisis brings out the best from us and that we are capable of pulling together and meeting the challenge to our national security. We amply proved in 1965 and 1971 in conflicts with Pakistan, that our nationalism and patriotism assert themselves at the crucial time and that we can fight and that the whole nation will rise to a man forgetting all our differences and mutual bickerings.

This, then is the background of the material with which military leadership has to work to transform the forces into efficient organs imbued with pride for the nation and a dedicated sense of duty to safeguard the territorial integrity of the country. The strategy for influencing an army which dwells among an alien population is not so complicated, the thinking and way of life of the people being mainly

irrelevant ; but, inspiring an army which dwells among its own countrymen is altogether a different proposition. It is a part and parcel of the people amongst whom it dwells and receptive minds of the soldiers are always open to their thoughts and ideas. The inspiration of the army requires the inspiration of the Nation of the whole population in whose houses and homes it lives ; who are their fathers, mothers, sisters, friends and so on. That is the spirit of Field Marshal Montgomery's statement in March 1944 when preparing for the great adventure in Normandy, he said, "We must call the whole people to our help as partners in battle, only from an inspired nation can go forth under these conditions an inspired army".

LEADERSHIP AND MAN-MANAGEMENT

Man-Management. It would be better to clear up first an old controversy about the difference between leadership and man-management. Man-management has been defined as the ability to convey ideas, to assume leadership and to arouse enthusiasm amongst men. True man-management in our new military environment demands close comradeship and mutual respect amongst officers and men, a sure knowledge of their mental make up and motives influencing their actions in their daily tasks and a deep sympathy and understanding. The aim of man-management is to put a soldier in the right frame of mind to carry out his duties efficiently and cheerfully. It therefore embodies training and maintenance of morale. The concept of welfare in man-management, however, should never be at the cost of training, discipline and efficiency.

Relation with Leadership. Scientific investigation has revealed that efficiency in individuals is due 15 per cent to technical knowledge and 85 per cent to the technique of human engineering and to personality and ability to lead people. Leadership is a mixture of example, persuasion and compulsion. It is leadership that makes man do the job that the leader wants them to do. Therefore it is a vital adjunct to man-management.

MAN-MANAGEMENT

THE EFFECTS OF CHANGE

Notwithstanding the democratic set up in the country and the new socio-economic changes which have taken place a soldier cannot expect to enjoy the liberty that his civilian counterpart enjoys. This does not necessarily mean that the armed forces should follow a system which is totally authoritarian. On the other hand, an element of democracy should always prevail. This means encouraging more participation on

the part of the soldier in unit administration and keeping him well informed so that he understands why he is required to obey particular order, rule or regulation. Within limits, the enquiring mind has to be satisfied to get the best from the limb. This aspect can no longer be ignored ; as it provides motivation to the soldier as to why the orders should be obeyed. Today a jawan wants to know more about policies and the part he is to play in their implementation. However, once a leader wins the confidence of his men and they are certain that their interests would be looked after by him they would do everything without any hesitation or question. The British did not want to keep the Indian soldier well informed as this would have run contrary to their interest in this country. During those days representations against ACRs were unheard of and if ever such a thing happened it soon became the talk of the entire cantonment. There was also no emphasis on career planning. One cannot imagine things to happen that way today.

We have been successful in introducing so many radical changes in army in matters like training, recruitment and discipline. Even at the best of time the foundation of any organisation cannot be disturbed without risking the safety of its structure. But our army has done just this, while fighting four wars since independence and coping efficiently with radical changes in the psychological content of the army. This transformation is continuing, but it has to be slow, otherwise fighting efficiency would suffer. But the greatest change in the realm of man-management which can be perceived has been in the officer-man relationship and in the Indianisation of the officer corps. Such changes must continue and there could be no finality with regard to these.

DIVERSITY IN BEHAVIOUR

It is but natural that different persons should react differently even under identical circumstances. This must be due mainly to the fundamental differences between the mental make-up of individuals and the intricacies of the human mind which we cannot fully understand. On the whole I think we insist too much on behaviour commonality in army. In the wake of changes which are taking place around the armed forces, it is important that we distinguish between behaviour and performance disciplines. To what extent the outward behaviour should be regimented, cannot be judged without undertaking a study of the ramifications of the subject in great detail. However, one thing has emerged, that is, the emphasis is not on enforcing outmoded customs and manners. As can be seen, in the future more diversity is inevitable in the code of conduct in the messes and clubs and social routines. Officers would like to have much more latitude to express their personal views on many matters.

Rather than laying down guidelines as to what patterns behaviour should conform to, it would be better to consider its likely effects on performance. Behaviour and performance cannot be completely divorced as they are inter-linked in many of their aspects. Without in any way belittling the importance of the individual, it has been amply demonstrated that success in battle depends on the collective will, collective courage and readiness to accept risks. Any lapses in individual behaviour which are detrimental to this vital necessity must never be allowed to rear their ugly heads and there can be no compromise.

SPIRITUAL, MENTAL AND PHYSICAL ASPECTS

An effective man-management always provides for the fulfilment of the spiritual, mental and physical needs of the men. From the spiritual aspect facilities for the observance of religious rites must be provided and spiritual guidance must be arranged. Similarly proper arrangements should be made for burials and cremations during war. On the mental side soldiers should be enabled to develop a sense of security which means that the leader should gain their confidence. The knowledge that they will get a fair deal that their interests are in safe hands is very essential. Provision of good training and proper equipment is necessary as these influence the morale of the troops. Physical needs of the soldier should be catered for by providing family welfare, games, material comfort, good medical facilities, rest, leisure and good food.

NEW APPROACH TO LEADERSHIP

Rapid technological and social changes have created a highly complex leadership role for the professional soldier. Through the years the formal study of leadership has become very sophisticated and it would be very difficult for one man to learn of all the concepts and read all books on leadership. Military leadership is the process of influencing men in such a manner as to accomplish the mission. The concept is based on accomplishing the mission while preserving the dignity of soldier. Field Marshal Montgomery summed up his entire doctrine of command in one word : Leadership. He defines leadership as "The capacity and will to rally men and women to a common purpose and character which inspires confidence". Merely to have capacity is not enough; the leader must be willing to use it. His leadership is then based on truth and character; there must be truth in purpose and will power in character. This is very true; men must be told the truth, otherwise they soon find it out and their confidence in the leader declines. However, in war it may not be necessary to tell all the truth as it would sometimes compromise secrecy and vitally affect operations.

Leadership is not solely concerned with officer-man relationship. For example, GOC of a division cannot have expert knowledge of all fields and depends on his advisers both of arms and services, hence he must deal with a number of experts. The process of decision making therefore calls for the use of leadership techniques and skills not required in similar leadership situations in the past.

LEADER, SITUATION, GROUP CONCEPT

The principles of leadership have been subjected to much scientific research and the latest concept is to apply the "leader-situation-group" approach. Scientists have explained that an effective or ineffective behaviour is not the actual behaviour of the leader, but the interaction of the leader's behaviour to the environment in which it is projected. Thus they say, there is no ideal leadership style suited for all situations. The effective leader must be able to anticipate the environment and adopt his leadership style in the light of the situation. This concept would want the leader to vary his style between the autocratic and the democratic depending upon the situation changes he meets with or as the group he leads change. In our present military environment, the leader should tread the middle path of these two styles, termed as the variable leadership style. This is because, whatever the style it is the military leader who must make the final decision: And while the democratic style of leadership certainly has its limitations in army situations, the autocratic style will hardly pay dividends these days and might be used only when absolutely essential. As a leader, one must vary the style to be effective in the changing situations and varying groups.

TRAIT APPROACH TO LEADERSHIP

No writing on leadership would be complete unless some thing is said on leadership traits. Extensive studies conducted after the world War II have shown that successful military leaders had certain common traits, such as "bearing, courage, decisiveness, dependability, endurance, enthusiasm, judgement, justice, knowledge, loyalty, tact and unselfishness". The intellectuals have now discarded the trait approach and say that it is invalid now. They say that leaders do not have a sizeable number of these qualities to differentiate them from non-leaders and that the trait approach to leadership has outlived its utility. I think this is a overreaction on the part of the academicians to the trait approach. It is a well known fact that certain characteristics are necessary in a leader. One that stands out is that a leader must have a pronounced sense of wanting to have his mission accomplished. If a man has no desire for accomplishing the mission he will be a failure whether in military or civil life. Similarly a lack of professional knowledge will be

a serious handicap to any leader and might nullify all his attempts to lead. Another trait which a leader must have is personal integrity. No army will accept a leader who does not have this important trait. The trait approach to leadership, however, is used very little in foreign armies in advanced teaching. The leadership instruction is based more on "leadership-group situation" approach to problem.

Field Marshal Sir William Slim has said that leadership is the most intensely personal thing in the world, because leadership is just plain "you". Whether a leader functions in a autocratic, democratic or variable style of leadership in any environment he would require certain qualities in his personality. Important among these qualities are courage, will power, initiative and knowledge. To display an alert, bold and determined leadership in the present environment a leader must have these qualities in abundance. Shall we examine what these mean as they apply to a military leader ?

COURAGE

Courage is a mental quality that recognizes fear of danger or criticism, but enables a leader to accept responsibility and to act correctly in a threatening situation with calmness and firmness. Courage means giving lead when it is most dangerous and accept hazards, however serious they may be. The leader must have moral as well as physical courage. Moral courage means knowing and standing for what is right in the face of popular disfavour. A leader who has moral courage will admit his errors but will enforce his decision when he is sure he is correct.

WILL POWER

A commander must have the will power to see that his orders are carried out in the spirit he intended. Sometimes it is not very difficult to know what one wants to do, the difficulty is to get it done. A leader will have all sorts of opposition and he must have the strength and will to break it down and force his plan through. However, a leader cannot afford to be plainly obstinate and mistake this for strength of will.

INITIATIVE AND KNOWLEDGE

The next two qualities a leader must have are initiative and knowledge. Initiative simply means that as a leader one should not sit down and wait for something to happen. Soldiers unite quickly behind a commander who meets new and unexpected situations with prompt action. Initiative really depends on how much the leader thinks ahead. The importance of professional knowledge in the exercise of thinking

ahead cannot be over-emphasized and this has already been mentioned in this article earlier. Officers can have no business to set themselves up as leaders unless they know their jobs better than the men they are leading. The leader must have knowledge of his men and how to deal with them. This aspect would be dealt with separately under the officer-man relationship portion of this article.

SPIRIT OF SELF SACRIFICE

The four qualities, those of courage, will-power, initiative and knowledge, will make any leader effective in the most trying military environment. But to be a lasting success, a leader must have one more quality and that is the spirit of self-sacrifice. If this is there, the men will follow the leader not merely in good times, but more so in bad times.

LEADERSHIP AND MOTIVATION

In the past, till 1950, the identification with his heritage of belonging to a section of citizenry which adopted army as a profession was itself a sufficient motivating force for a soldier to fight and give his all. To enhance his motivation he was also given preferential treatment and his status in the society was recognized. These days we get soldiers from all shades of populace, not only from exclusive groups, but if the cause of a soldier is glorified only during a war or little after cease fire, and there the recognition for him ends, where is the motivation. Pay may be a sufficient motive for a soldier to join the army but it is not sufficient to motivate him to fight hard. This was proved in war in Vietnam. Did not the guerillas fight in Vietnam with little or no pay? We do not have any dearth of recruits for our armed forces but it does not mean that we have the rightly motivated army. May be the recruitment in the army has been buffering to some extent prevalent acute unemployment problem in the country and consequently selection may have suffered.

We have now been insisting that good soldiers can come from any walk of life and not necessarily from the chosen groups. People from these group are also realising that other jobs are more lucrative and easy-going than serving in the armed forces. Therefore the feature, that the sense of belonging to such groups which had traditional association with armed forces and the prestige that went with it, as a motive to join army, is fast disappearing. There is therefore, an urgent requirement to find a better way to motivate our soldiers.

It has been proved in the last two wars with Pakistan that the Indian soldier responds to his sense of patriotism and nationalism. This

could be the strongest motive for a soldier to fight. A soldier requires to be steeled and trained properly to withstand, the disruptive impact of anti-national forces. He must know what he is fighting for and why he is required to fight, then only one can count upon his full co-operation. The onerous responsibility of motivating the man lies on military leadership, ie on the officers.

Even after such a political motivation a soldier has to be kept on the alert and to be reassured that he is cared for and that there is somebody to look after his interest. He is then prepared to give his best to the nation—even his life. He must be assured of a decent standard of living and he must be satisfied that his position in a rigid discipline is not exploited by others, that his profession has got an adequate status in society that while he is fighting for his country, the rest of his countrymen are also doing their share and that while he is doing his duty away from home, his family will be looked after. The nation and the society must provide such assurances to the soldier before he can be expected to give his best to the nation and the society. As compared to other professions, the armed forces must offer an equal if not a better opportunity for financial benefits and security.

OFFICER-MAN RELATIONSHIP

The first bit of knowledge that a leader must acquire is how to deal with his men. Know your men; The basis of all leadership is knowledge of men, only then can a correct officer-man relationship evolve.

It is essential to understand that battles are won primarily in the hearts of men. The young soldier today reads the newspaper and has the radio. He goes to the cinema and sees how people live and think in other countries. All these media furnish him with adequate information to measure his every day environment, which was not possible previously. He is daily taking in information and relating it to himself. He can think, he can appreciate, he is definitely prepared to criticise. He wants to know what is going on and what you want him to do and why and when. He wants to know that in doing what he is asked to do, his best interests will absolutely be safe in the hands of his officer. If all these aspects are appreciated by the military leader he will find it easy enough to gain the trust and confidence of his men by his actions.

Bottled up in men are great emotional forces which have got to be given an outlet in a way which is positive and constructive and which warms the heart and excites the imagination. If the approach to the human factor is cold and impersonal, one achieves nothing but if a leader has gained the trust and confidence of his men, then he has in his

possession a priceless asset and greatest achievements bordering on the miraculous become possible. Some of the aspects of leadership and officer-man relationship requiring re-thinking in the changed military environment are discussed in the succeeding paragraphs.

The Individuality of the Men. The necessity for recognizing the individuality of men takes nothing away from the leader. He must still provide guidance, make decisions, see that plans are made, see that subordinate performance is satisfactory and so on. However, he is responsible for seeing that work gets done, rather than doing it himself. He, therefore, often faces the problem of relationship between himself and his subordinates. He must create a relationship that will not damage, but will contribute to the effectiveness of the organisation. This requires recognition of individuality in each of his men and using this knowledge in exercising leadership.

Loyalty. The concept of loyalty has also changed with the times. Instead of denoting a slave mentality, loyalty today should take the dignified form of loyalty to the country to the armed forces and to one's duty. Though this pre-supposes discipline, the superior who enforces it must earn it through sincerity, affection and devotion to duty. It must be understood by all that loyalty does not brook double standards and must be reciprocated.

Social Status. The nation is gradually moving towards a classless society with the aim of achieving social equality, then men are no longer under any inhibitions and express their views to their officers with frankness and candour. The officers come from all sections of the society and a commission in armed forces is not restricted to any particular class. The large number of officers come from the same social state as the men they command. There are men who are as qualified as their officers and with a little luck would have earned a commission. These feelings of the soldiers must be understood by the officers. To become an officer in the armed forces is no longer difficult and others do not consider it an extraordinary achievement. It does not automatically earn him respect and admiration from his men. An officer will have to work hard to be acknowledged as the leader of his men by virtue of his professional knowledge, self-sacrifice and personal example. It would be unwise to expect implicit obedience and admiration from men merely by virtue of rank and appointment.

Mixing with Men. In the past it will be emphasised, that an officer should stay away from his men and not get familiar with them. There is no place for such an attitude today. The trend of social equality demands and expects the leader to be a friend, philosopher and guide to his

men. An officer therefore should encourage the men to speak their minds and mix freely with them subject only to any situational constraints.

Rights and Privileges. The soldier has become very conscious of his rights and privileges. The foundation of good discipline is justice and it demands that men should be given their rights to which they are entitled. They must be given their due without their having to ask for it. An officer must know at all times the entitlements of his men and he must ensure they get them in time. In our army, officers are given certain privileges which go with rank and appointment. Even in totalitarian states officers are given some privileges which men do not have. But it must be ensured that no additional privileges are coined by an officer for himself by virtue of his rank, appointment and authority. If this happens it is likely to be resented and even challenged by the men.

Standard of Responsibility. The one encouraging feature of the new environment is the increased awakening and sense of responsibility among all ranks. We often find that the sense of responsibility of juniors is spoilt by constant curbing of their initiative, enthusiasm, drive and originality, by the seniors. Each individual within the frame-work of his responsibilities should be given reasonable latitude and left free to carry out the task. Repeatedly doubting the subordinate's sense of responsibility only makes him less responsible and less confident. The men today do not have to be driven as in past. The soldier has a big role to play in his commander's plan. After all, in the ultimate analysis he and his commander have the same objective.

Spartan Habits. The present day soldier has become soft like his civilian counterpart who is leading a more comfortable life. As our life becomes easier on account of modern gadgetry, the harder will it be to produce a more resourceful and tough infantryman. It has been said that hard living and a spartan outlook make for good soldiers. Napoleon used to say that "poverty, privation and want are the greatest schools of soldiering." In our country we do not have sufficient economic prosperity as yet, but this problem is likely to arise in the future. However, comfort is a relative term and it is a training matter to make soldier attune himself to the desired standards of comforts in army. The lower the standard of comfort the easier it would be for men to adjust to wartime privations. The Chinese soldiers and Vietnamese guerillas are good examples to illustrate this point.

The emphasis should be not on making a soldier uncomfortable, but to make him feel comfortable even in adverse circumstances. Then there is the effect of fashions on the armed forces. Nobody minds a

soldier dressing up smartly provided he does not lose his manliness in doing so. The prevalent hippie trend among young men of the nation is beginning to manifest itself in armed forces also. There can be no two opinions about these being unhealthy trends in our army or that they must be eradicated. The importance of smartness in turnout, alertness of carriage and cleanliness of person and precision of movement in the armed forces cannot be over-emphasised.

Religion. A leader must always keep his finger on the spiritual pulse of his troops. He must make sure that spiritual levitation which inspires them is right and true and adequate to each and every one of them. It is essential to ensure that the men get correct spiritual guidance. Such guidance should be calculated to generate noble qualities of selflessness, courage and sacrifice. The spiritual quality which inspires the men should be for good and not evil. Leadership which is evil while it may temporarily succeed, always carries within itself the seeds of its own destruction. The Pak military leadership's debacle in Bangla Desh in 1971 is a classic example of this. Ours is a secular state, yet the bonds of formal religion are remarkably strong. Officers should make it a point to patronise all religious functions irrespective of their caste or creed.

RECOMMENDATIONS

In the light of the new approach envisaged on the concept of man-management, leadership and officer-man relationship the following recommendations at formation unit levels are made.

FORMATION LEVEL

At formation level the commanders should often meet and talk to the troops. For restoring the morale of the soldier in the cause of the army, a direct approach to the individual men by the commanders would be more fruitful. Informal talks and contacts between the troops and the commanders would be a more effective way of putting across ideas than resorting to written exhortations. The only way an army can be held together in a crisis is that the men know and see their commanders.

Generate faith in the minds of the troops regarding the national cause and our social and political structure. Keep the soldier informed with suitable literature, personal talks and screening of specially prepared documentary films on the subject.

Maintain high morale by good leadership and man-management. The role of public relations and welfare services is important in this respect. Create a sense of awareness in civil administration about the

importance of speedy actions to solve the administrative and domestic problems of the service personnel.

The decisions should be speedy and firm. A mediocre decision given in time will produce better results than a superlative decision given rather late. Calmness in crisis is an important feature of leadership at this level. Any signs of vacillation and indecision are bound to create panic and demoralise officers and men at lower levels.

UNIT LEVEL

Full use of men requires the organisation of duties and functions so as to get the most productive performance from their human capabilities. It requires recognition of men as a resource having individual abilities, limitations and characteristics which require the same attention and maintenance as any other resource. It also requires recognition of the human resources as people who have personalities, emotions, legal status, and control over how much and how well they perform. Therefore, men require motivation, satisfaction, rewards, inspiration and consideration. It is vital to understand this at unit level and failure to recognize these requirements can cause serious problems and an ineffective unit.

The emphasis should then shift on giving more responsibility to the JCOs and men. The change in attitude of mind has brought about a new awakening among men and this should be exploited. Their initiative and originality should not be curbed by constantly breathing down their necks with unnecessary supervision which only makes them less responsible.

The training in discipline should aim at creation of self-discipline or discipline from within. With the enlistment of educated men, there would be better response and the men no longer require harsh or iron-rod discipline of the past.

The relationship between officers and men will have to be based not on coercion but on coaction. The officers should have sure knowledge of their men and their mental make-up. Traditional customs and practices based on domination will have to be discarded and replaced by participation leading to integration. This will help in producing a better cohesion in the units and also satisfy the sense of belonging on the part of the men.

In the past the man was motivated to satisfy his psychological and security needs. Today he desires prestige, recognition, authority, responsibility and progress. If these emotional needs are not met, a sense of inadequacy and frustration is generated. Therefore at the unit level, greater emphasis will be required on fulfilling these needs.

The suggestions made above are equally applicable to services units, but the standard of education in technical arms and services being better as compared to the other arms, a more tactful and imaginative approach is required in handling men who are very conscious of their technical skills and attainments.

CONCLUSION

The art of man-management, leadership and officer-man relationship has to be looked afresh in the light of present socio-economic conditions in the country. True man-management demands close comradeship and respect between officers and men. There can be no lasting leadership without good man-management. The "leader-situation group" approach to the concept of leadership is now widely accepted in all countries. The concept teaches that there is no ideal leadership style appropriate to all situations. Leadership style will vary through a scale ranging from autocratic to democratic depending upon changing situations and changing groups. In dealings with subordinates justice and a keen sense of fairness are essential—as also a full measure of human consideration in present military environment. A soldier has to be convinced before he accepts anything. He must be politically motivated to stand up to anti-national forces. The whole nation has to co-operate in producing a rightly motivated army, an inspired army can come from an inspired nation only. Officers can no longer earn the respect and loyalty of their men merely by virtue of their rank and appointment. To earn the true respect, loyalty and admiration of his men an officer has to possess true qualities of leadership such as professional competence, self-sacrifice and devotion to duty. There are no shortcuts or shibboleths to leadership.

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Officers' Appraisal System in Defence Services

SQUADRON LEADER KN PARIK

IN every formation/unit, there is a flurry of activities towards the end of the assessment year. The red bulb is switched on outside the Commanding Officers' Office and a sudden stillness prevails in the corridor. He becomes pre-occupied initiating or reviewing the Annual Confidential Report, an important service document which constitutes a record of officers' character, ability or performance in the service. To many senior officers it is a paper-exercise which has to be gone through as a matter of routine every year; to others it is bug-bear as they have a distaste for playing God, sitting on judgement on officers working under them.

PURPOSE OF ANNUAL CONFIDENTIAL REPORTS

The Annual Confidential Report is a document which provides a pen-picture of an officer as a service officer and as a man. It brings out intra-individual or inter-individual differences, especially in respect of job performance. It establishes the identity of an officer and brings out strong and weak points in his personality. The reasons for rendering annual confidential reports can be categorised as administrative and developmental. In administrative reasons we can list selection of officers for promotion, appointments, transfers, training and very often conducting research and follow up action on the reports rendered in the initial stages of officer's career. The Career-planning or development aspect comes when the officer is interviewed and informed about his weakness in areas where he is advised to take remedial action for improvement in his performance. The Officer may be sent for training to overcome his shortcomings or assigned duties which may enable him to gain the requisite experience.

A Critical Review of the Present System. It is imperative to carry out a critical review of the present system, with a view to understand it in proper perspective. Does the present system, of raising Annual Confidential Report achieve the purpose for which it is intended, viz to

portray an officer as a service officer and as a man? Is it a faithful record of the officer's ability, character and performance? Does it help in meeting the administrative and developmental aims as mentioned above? Is it personality oriented or performance-oriented? Does it meet the needs of the changed modern circumstances? There are many questions which arise when we review the present system of appraisal in the services.

Trait-Based Approach. The present system of Annual Confidential reports lays a great stress on the personality traits of an officer. The Officers are assessed on qualitative and quantitative possession of these traits. Though the traits are intangible and not easily measurable, they have been assigned numerical values. The assessment is personality-oriented and not performance or result based. It does not refer to what officer has done, it refers to what he can become. It does not measure performance, it evaluates the capabilities and future potential of an officer.

DEFINITION OF TRAITS

There is no standard definition of 'Traits' as a result every appraiser interprets it in his own way. In absence of such definitions of the traits and qualities, the officer-like qualities have become nebulous and amorphous. To add to the difficulties, there is a confusing variety of traits. The Defence Services of different countries have no consensus regarding the officer like quality and have adopted varying set of traits for appraising officers. In Appendix 'A' leadership traits in USA, Britain and Canada have been mentioned. In our Defence Services there is no uniformity in traits or officer-like qualities. They vary from one service to another.

In order to facilitate the task of appraisers in industries as well as in defence, the traits have been defined. In US Navy Report on fitness of Officers, intelligence has been defined 'faculty of comprehension, mental acuteness initiative as Constructive thinking and resourcefulness, ability and intelligence to act on own responsibility', judgement as 'discriminating perception by which value and relations of things are mentally asserted'. Though definitions of readership traits have been attempted, they vary not only in defence Services but also in industrial organisations. In short, there are no standard definitions.

POOLING THE SEGMENTS

The greatest defect in trait approach is the assumption that human personality can be split into segments and to evaluate the total personality, all that we are required to do is to aggregate numerical

scores of all segments. The marking scale gives all the traits equal significance in relation to officer's effectiveness. This is not correct if we relate the traits to the jobs. Another wrong assumption is that deficiency in one trait can be overcome or compensated by another trait which happens to be strong. How can courage be compensated by co-operation, lack of initiative by endurance or stamina? The numerical score bales out an inefficient officer who happens to be deficient in any important trait.

WEIGHTED TRAITS

Some students of appraisal have supported the idea of weighing the traits according to their significance to overcome the defects arising out of pooling the segments. There are many difficulties in implementing the suggestion. Who is to assign weightage and how to verify the assessments given? Another difficulty in weighing the traits is that there is no uniformity of traits and they vary from one organisation to another.

INTER-CONNECTED TRAITS

Very often the traits in the service proforma are overlapping e.g. loyalty, dependability, sense of duty, drive, determination and stamina. This results in disproportionate weightage to the factors and does not bring out the distinction between various traits either intra-individual or inter-individual.

JOB-RELATED APPRAISED SYSTEM

Any ideal appraisal system is related with the jobs actually performed. Our defence appraisals are mostly personality centred and not related to the jobs performed by the personnel. No appraisal system can be in isolation and stand by itself. In defence appraisal proformae, the type of jobs performed by the officers are not spelt out in precise terms. The duties performed by the officer are either primary which relate to branch arm or secondary/additional, which are also significant as they are time-consuming.

The appraisal proformae generally don't take into account the rank and seniority of the officers, and apply common yard-stick to all. The officers work at three levels depending upon the rank and seniority-functional, directional and conceptual. These levels correspond roughly with supervisory, middle and top management in industries. In army, there are three different proformae relating to these three levels. In Navy and Air Force this aspect is yet to be given a practical shape.

In our Defence Services, the job requirements also vary according to branch/arm. The branches/arms can be under various categories—

executive, administrative, technical, flying etc. The qualities or personality traits relevant to performance of duties vary. In our appraisal system, this aspect has not been catered. Similarly the appraisal proforma for officers engaged in flying duties, training course, combat activities should have direct bearing with the jobs/activities. An ideal appraisal system should be a mirror which should reflect the duties, activities, jobs performed by the defence personnel and not confine itself to potential/traits not directly related to the jobs performed.

EVALUATION DISTORTIONS

Any appraisal system which is subjective in nature, and emphasises on personality traits will undoubtedly suffer from certain distortions. It is subject to individual whims and fancy and personal prejudices. There will be errors arising out of central tendency e.g. assigning the majority of appraisals on mean grades. The concept of trait differs widely. Some appraisers emphasise the present capabilities while others look to officers future potential. Halo effect is another pitfall of the system. The assessor is deeply influenced by one particular aspect which colours the appraisal of overall performance.

INFLATED APPRAISALS

Very often there is inflation of appraisal by the appraising officers. This is mainly due to reason that the senior officers are afraid to court unpopularity, spoiling of interpersonal relations and choose to inflate the report instead of giving a correct and frank appraisal. According to normal probability curve or Law of Averages, the majority of service officers fall on 'average grade'. In Defence Services, the majority of the officers are placed in 'Above average' grade. In Canadian Navy in one particular year, 99% of the officers were placed on 'Above Average' grade. Such inflated reports defeat the very purpose of the appraisal system.

COMMUNICATING THE REPORT

The contents of Annual Confidential Reports are not communicated to the officer, as a result the officer is not able to visualise his position vis a vis his colleagues or in respect to the organisation as a whole. Since no appraisal interviews are conducted, the question of appraisal counselling does not arise. The officers do not know which aspect of his personality or performance needs improvement so that his effectiveness to the service can be proved.

ONE-SIDED REPORT

The appraisal system is more or less one-sided. It does not give importance to assessee's opinion and does not provide scope for

expression to his hopes, aspirations, his outlook and viewpoint. The system gives prominence to assessor's opinions, as a result of which he misses the opportunity to harmonise the individual and service goals. This leaves the officer dissatisfied and frustrated. Besides this, he is deprived of the wise counselling of the appraiser in respect to advancement of his personal goals and career planning.

NEW APPROACH—APPRAISAL SYSTEM

The main defect of the traditional approach was its subjectivity. The managers did not feel happy about the system as it pricked their conscience in playing God, presiding over the destinies of their subordinates. The appraisal system was trait-centred and not performance-oriented. Many students of industrial psychology advocate 'Management by Objectives Approach' towards appraisal as it has greater objectivity. This approach does not concentrate on 'What a person is', it emphasises 'What he has done'. In 'management by objectives' the manager provides the frame work. He gives the key result areas after a thorough analysis of the job. The defining of the goal is a two way approach. The subordinates propose the goal. The superior and subordinate get together to give it a final shape. Later on the subordinate submits a report on the progress and achievements and in a joint sitting the results are analysed with a view to effect the improvements. The employee's performance is judged against verifiable objectives. The advantage of this approach is that both sides participate in the appraisal and the system does not prove a bugbear to the superior or subordinates. Now let us study the main features of the New Appraisal System.

EMPHASIS ON DEVELOPMENT

Development of the employee is the main aim of any sound system of appraisal. Assisted by the wisdom of the counsellor and through personal efforts, the officers should be able to reach the peak of the efficiency, convert his abilities into practical shape and develop those areas where improvement is required.

Communication of the Confidential Reports. The superior officer informs his subordinate officers his strong points and failing in the appraisal interview or by showing him the confidential reports. He discusses the performance results against verifiable objectives and brings out as much objectivity as possible. The superior officer advises the appraised officer as to how to improve upon his performance and bring out his potentialities.

PERFORMANCE BASED APPROACH

This approach concentrates on performance objectives which are decided as a result of discussion between the assessor and the assessee. This system does not confine itself to the traits and potentialities of officers or his personality. Thus it avoids the pitfall of the older system. It focusses attention on the officers' performance (What he has done). To quote Peter Drucker "Many appraisal system focus on a man's potential. This may be a sound psychology but it is a poor management. Appraisal should focus on his proved performance". According to the new approach tasks performed by the officer during the course of the year under review are listed, so that he may be given credit due to him. His performance on primary as well as secondary duties is considered and appraised. Efforts are made to quantify the tasks and made them measurable against the results. As pointed out by Patton appraisal should be made against quantified verifiable objectives set beforehand following the MBO approach.

IMPORTANCE TO PERSONAL GOALS

In order to achieve optimum results efforts are made to internalise the organisation goals—establish harmony between personal goal and the goals of the organisation. This aspect is not given its due importance in our service life. The officer's aspirations and service ambitions, his views regarding career planning are, by and large ignored.

ASSESSING OFFICER'S POTENTIAL

Any ideal appraisal system should be able to identify officer's potential with a view to ascertain his future promotion. On Defence Services, a great deal of importance is attached to "Above Average" reports. The officer is not considered fit for promotion without an above average report. This should not be a criterion for officer's promotion to the next rank, though it may be considered for accelerated promotion. The assessment of officer's potential should not be based on mere consideration of personality, his performance should be assigned an equally important role.

CONTROL SYSTEM

Any appraisal system should have built in controls to correct under/over assessments and other distortions creeping in due to bias/central tendency etc. The arithmetic paradox was noticed in the evaluation of Naval officers in Canada where 98.5% officers were judged outstanding/excellent and only one per cent as average. There are many methods to

correct such evaluation distortions :--

(a) *Double Appraisal.* The appraisal should be done independently by initiating officers as well as Reviewing officers. After carrying out assessments on their own, they compare notes and try to balance their appraisal. This task can also be entrusted to a third party. In any case, check on appraisal is necessary.

(b) *Statistical Moderation of Assessment.* As pointed out earlier, there is a tendency to place officers on one grade mostly mean or above average. It is recommended that "normal probability curve" be applied for moderation of inflated or deflated reports. A suggested distribution on a 9-point scale is given below :—

4	7	12	17	20	17	12	7	4
Ex Superior	Good	Fair	Average	Below	Poor	Inf	Bad	
Average								

(c) *National Average Rating.* Another suggestion has been made to counter-act evaluation distortion. It has been suggested that National Average Rating should be worked out with the help of Electronic Data Processing in order to provide a standard yard-stick to evaluating officer.

(d) *Appraisal Training.* Appraising others is an art for which few people are equipped, as one needs to understand human psychology, have worldly wisdom and necessary expertise. It is therefore necessary that officers in Defence Services are trained and equipped to take up the role of appraisers.

CAUTION AGAINST M B O APPROACH

MBO approach has certain advantages but it should not be taken at its face value. To quote D R Hampton "MBO Clarifies goals and expectations", leading to improved planning, clear standards for control, improved motivation more objectives appraisal and better moral". It has its drawbacks too. The goals may not be realistic; individual goals may not be compatible with service goals. There is a tendency to pick up quantifiable goals because they are easy to measure and not because they are important for the organisation. In Defence Service, senior officers who set up ambitious and unrealistic goal for their subordinates, may coerce them to fulfil only because the latter also agreed to them in the initial stage. It may also be appreciated that potential and performance are matching and not conflicting. MBO approach emphasises only performance. Good performance comes only through possession of certain qualities of head and heart. It is therefore necessary that goals are arrived at with due caution and are realistic. MBO approach appraisal should be applied with due caution.

IMPORTANT ELEMENTS OF LAY-OUT OF APPRAISAL PROFORMA

The appraisal proforma should have the following elements to incorporate the features of the suggested appraisal scheme :—

- (a) *Performance of Primary Duties and Responsibilities* : This needs listing duties and jobs performed during the year under review.
- (b) *Achievements/Results* : The officer's achievement in training, staff duties etc, as the case may be should be discussed objectively and brought out prominently.
- (c) *Methodology* : In this part of the appraisal proforma, methods adopted by the officers, interpersonal relations, command, social climate created by him should be discussed.
- (d) *Personal Traits* : The performance should be critically analysed and the qualities/traits displayed by the officer should be brought out in behaviouristically clear statements.
- (e) *Promotion and Employability* : In this part of ACR, the employability of the officer, his promotability in the rank accelerated or in turn should be brought out. Here the potential and development aspect should be discussed and the type of training, experience requested for future growth of the officer should also be recommended.

CONCLUSION

In the preceding paragraphs, we studied the present system of appraisal in the Defence Service and pointed out some of its growing shortcomings, arising out of various features, e.g. confusing variety of traits and lack of standard definitions, pooling of the segments, evaluation distortions, inflated and one-sided reports, lack of appraisee. We then suggested a new approach to the appraisal system. In the previous approach, the focus was on personality rather than on performance whereas the new approach emphasises performance. We suggested various means to overcome over/under assessments by the evaluations. The new approach is inspired by 'Management by Objectives'. It would not however be advisable to go all out for this approach as it has certain practical difficulties in implementation. We should take precautions against some of its inherent defects. Finally we suggested various elements which should be incorporated in the new appraisal proforma for the Defence Service.

Appx. A

LEADERSHIP TRAITS—I

US Marine Corps	RMC Canada	US Army	BRNC Dartmouth	RAF College
Integrity	Loyalty	Bearing	Faith	Efficiency
Knowledge	Professional Competence	Courage (Physical & moral)	Courage	Energy
Courage	Courage	Decisiveness	Loyalty	Sympathy
Decisiveness	Honesty	Endurance	Sense of Duty	Resolution
Dependability	Commonsense	Initiative	Integrity	Courage
Initiative	Good Judgement	Integrity	Humanity	Tenacity
Tact	Confidence	Judgement	Commonsense	Personality
Justice	Initiative	Justice	Good Judgement	
Enthusiasm	Tact	Loyalty	Tenacity	(Amp 202)
Bearing	Self Control	Tact	Fortitude	
Endurance	Humour	Unselfishness	Physical & Mental	
Unselfishness	Personal Example	(Fd 28-100)	Fitness	
Loyalty	Energy	Military Leadership	Self Control	
Judgement	Enthusiasm		Cheerfulness	
(Card MCS Form 719)	Perseverence		Knowledge	
	Decisiveness		(BR 2138)	
	Justice			
	(Syllabus 1962)			

Extracted from "Training for leadership" John Adair, Macdonale.

Book Reviews

NATIONS IN ARMS—THE THEORY AND PRACTICE OF TERRITORIAL DEFENCE

by ADAM ROBERTS

(Published by Chatto & Windus, London 1976) pp 288, price £ 7.50)

THIS study, eighteenth in a series of studies in international security, analyses the theory and practice of territorial defence. Since the end of World War II all states have been attempting to live with "the bomb" or without it. The havenots are of course more numerous. The concept of territorial defence has played a notable part in limiting the reliance placed on nuclear weapons. It is based on making one's own territory and people hard to conquer. It does not envisage retaliation against foreign powers nor even conventional military defence along a front.

Territorial defence claims to control military power by reducing the distinction between the armed force and the people which in its turn also reduces the danger of a military coup d'etat. Such a system could naturally be only defensive. It must be totally unsuited to attack and no one could, therefore, call it aggressive. It could not possibly lead to an arms race. With the total elimination of any idea of strategic bombing it would lead to limitation of nuclear proliferation. The concept would naturally do away with a great many alliances in which numerous states find themselves entangled.

The claims indeed appear tall in the present day environment. But they perhaps deserve a second look. Whilst the origin of the theory may be found in the works of Engels and Jaure's and the posture of Switzerland which has steered clear of wars since 1815, even in the recent past countries so widely differing as China, Indonesia, have practised some form of reliance on territorial defence. The inclusion of China in the list cannot be easily swallowed by us in India who have suffered a regular Chinese aggression. The author chooses Sweden and Yugoslavia for a detailed study of their approach to the concept of territorial defence. He makes a study in depth of their military preparations based on this concept against the background of their extremely different political and economic policies.

The reliance on territorial defence must be taken within the limits of today's world of nuclear powers and alliances. Decisive military

actions are today sought to be fought at sea and in the air outside one's own country. In a world of rapid industrialization and urbanization internal violence is often as serious a threat as foreign occupation. The most serious limitation is perhaps placed by the problem of mobilization. It might simply take too long. The examples of blitzkrieg and pre-emptive occupation witnessed during the last thirty years leave little doubt of the degree of preparedness necessary for every state to ensure its survival. To suggest that territorial defence might be capable of providing an alternative to some existing military strategies and forces is, therefore, to invite criticism. Yet the manner in which Vietnam conducted a war for thirty years resulting in the discomfiture of two large military powers would definitely show some virtue in the concept. The Americans certainly learnt not to laugh at the Vietcong.

Reading through the book one feels that the author might have with advantage discussed in greater detail the concept of territorial defence with direct reference to Vietnam and Switzerland, if necessary at the cost of reducing the space devoted to Sweden and Yugoslavia. The book, however, serves a useful purpose by pointing out that the alternatives presented by the facts of the nuclear age are not simply conventional defence or nuclear deterrence. At the very least there is a third alternative ie unconventional defence. In particular it has much relevance to India with its avowed policy of non-aggression and non-interference. By the summer of 1940 Switzerland had mobilized half a million men out of its total population of four million. Though they never fought, as many as 100,000 Swiss were on active service. We have something to learn from this.

V.J.M.

THE AMERICAN WAY OF WAR—A HISTORY OF UNITED STATES MILITARY STRATEGY AND POLICY
by RUSSELL F. WEIGHLEY
(Published by Indiana University Press, Bloomington and London, 1973),
pp 584. Price not mentioned.

THE book has been broadly divided into five parts :—

- Part I : Waging war with limited resources, 1775-1815;
- Part II : Young America as a military power, 1815-1890;
- Part III : Introduction to world power, 1890-1947;
- Part IV : American Strategy in global triumph, 1941-1945; and
- Part V : American Strategy in perplexity, 1945- . In its different chapters,

the book has dealt with USA's evolution of military strategy and policy throughout the ages. George Washington's strategy of attrition (or erosion) and Nathanael Greene's strategy of Partisan War during the American War of Independence were the products of the situation rather than any cultivated strategic doctrine. Even during the War of 1812 with Great Britain, the U.S. military leaders lacked education in military strategy. But since 1817, under the able guidance of Sylvanus Thayer, the Military Academy at West Point started a tradition of military thinking which, though originally borrowing much from Jomini, Clausewitz and other European thinkers, produced strategist thinkers like Dennis Hart Mahan and his student Henry Wager Halleck in the mid-19th century. (Halleck's "Elements of Military Art and Science" and Mahan's "An Elementary Treatise on Advanced Guard, etc." were published in 1846 and 1847 respectively). During the American Civil War, General Robert Edward Lee of the Confederacy preferred an offensive-defensive strategy, based on Napoleonic manoeuvre-oriented campaigns, while U.S. Grant, on the opposite side followed the strategy of annihilation as suited to the North's superior resources, and the same policy was also followed against the Red Indian enemy till the end of the 19th century.

D. H. Mahan's son, Captain Alfred Thayer Mahan proved himself as a great naval strategist who applied Jomini's dictum to naval warfare by identifying the enemy's ships and fleets as the main "objects to be assailed on all occasions." Although the Great War of 1914-1918 proved that frontal attack or Napoleonic manoeuvring was not possible in the face of entrenched machinegunners, the U. S. Army's military doctrine till 1939 remained Grantian, adhering to the destruction of the enemy's armed forces as the objective of warfare. The first World War also witnessed the introduction of air power in war, and Brig General William Michell, who commanded the U. S. First Army Air Service during this war, understood the strategic significance of destroying the enemy's vital centres, instead of his main army in the field. During the Second World War, U.S.A. followed A T. Mahan's strategic doctrine of annihilating the Japanese fleet, of course with the support of her air power, and leapfrogging and amphibious tactics. In the European theatre, while the tank-and-stuka *blitzkrieg* put an end to the first World War tactics of trench defence, the strategic air force played the most important role in undermining the enemy's will to fight by bombing his cities, arms factories and other strategic centres. (The Allied bomber offensive killed some 305,000 Germans and injured about 780,000). As General Arnold of the U.S. Joint Chiefs of Staff in World War II said, war became vertical.

The Second World War introduced a new element in strategy and warfare — the atomic weapon. In the post-War period, the old strategy

of annihilating the enemy's combats became dangerous if the latter had atomic weapons. Hence, a new strategy of deterrence, which excluded large scale wars, came to the fore. In Korea and Vietnam, the air power found its limitations to bend the will of a not-too-industrialised country to sue for peace. In a world with a number of powers wielding nuclear weapons, U.S. military strategy changed quickly and frequently from Secretary John Foster Dulles's deterrent strategy of massive retaliation to McNamara's 'strategies of counterforce' and 'assured destruction', President Robert Kennedy's strategy of flexible response, which encompassed the use of diplomacy and defence not as distinct alternatives, but as mutually complementary (Kennedy's strategy of action led to the Bay of Pigs fiasco in Cuba in April 1961 and the Cuban missile crisis of October 1962), and the Strategic Arms Limitation Talks (SALT) which started in the winter of 1969, Schelling's definition of military strategy not as the science of military victory only, but also as "equally, if not more, the art of coercion, of intimidation and deterrence", and Admiral J. C. Wylie's strategy of non-use of military violence, for military violence, once adopted, would neither be so nicely controlled or restrained as strategists like Schelling would have it, nor allow other non-military options to be tried.

While in the 19th Century, Clausewitz defined strategy as "the theory of the use of combats for the object of the War" and tactics as "the theory of the use of military forces in combat", Alastair Buchan wrote in 1966 that "the real content of strategy is concerned not merely with war and battles but with the application or maintenance of force so that it contributes most effectively to the achievement of political objectives." The Dictionary of United States Military Terms for Joint Usage, however, describes National Strategy as "the art and science of developing and using the political, economic, and psychological powers of a nation, together with its armed forces, during peace and war, to secure national objectives", and Military Strategy as "the art and science of employing the armed forces of a nation to secure the objectives of national policy by the application of force, or the threat of force."

Today, military strategy for the Big Powers appears to be confusing. Under the shadow of mutual nuclear deterrence, so many non-nuclear wars have been fought since 1945, that contemporary strategists will always be on the tip-toe to chalk out fresh strategies to meet changing threats from strategic and tactical nuclear weapons as well as conventional and guerrilla wars, besides economic weapons such as oil embargo, and urban guerilla tactics to coerce governments through high-jacking, kidnapping, political murder and black-mailing. Since 1971, it has become apparent that the U. S. strategy to outwit the principal rival, the

Soviet Union, has been to befriend China and take advantage of the great Communist schism and simultaneously to compete with her in the fields of diplomacy, military technology, localised wars and also in SALT. However, none can predict how long this strategic tight-rope walking can continue without a mishap.

This is a brilliantly written book which analyses the evolution of the military strategic thinking and policy of one of the two Super Powers of the world. It contains six maps and a select bibliography of American writings on Military Strategy, theoretical and historical. It will be immensely useful to soldiers, strategists, diplomats, policy-makers, and every intellectual concerned with national security.

TWENTY NINTH DAY : ACCOMMODATING HUMAN NEEDS AND NUMBERS TO THE EARTH'S RESOURCES
by LESTER R. BROWN
(Published by W.W. Norton & Company, Inc, New York, 1978) pp 363.
Price not mentioned.

THE book 'The Twenty Ninth Day' written by Lester R. Brown of World Watch Institute, is a very interesting analysis of ecological, economic and social systems of a world whose population is increasing rapidly. Human needs are met primarily from four biological systems; namely, fisheries, forests, grasslands and croplands. Brown has shown by collecting a lot of statistics from many countries, that the demands at current levels of per capita consumption of the population of the world has now exceeded the long term carrying capacity of these systems. However, the author has not taken into account the impact of technology fully or expansion of earth's renewable resources.

Accommodating human needs of the growing population to the earth's resources is a great challenge world's politicians have to face now. Population control in large countries like India is one such step. A balance has to be struck between the human consumption and earth's renewable capacity. Joint effort of nature and a high level of managerial skills are needed to tackle the problem. The book is written in a lucid language and is well illustrated graphically. This is a fascinating material for popular reading.

MODERNIZING THE STRATEGIC BOMBER FORCE : WHY AND HOW
by ALTON H. QUANBECK AND ARCHIE L. WOOD WITH THE ASSISTANCE OF
LOUISA THORON
(Published by The Brookings Institution, Washington DC, 1976 pp 116 ;
price \$ 2.95).

THE United States maintains a large bomber force at an annual cost of \$ 6 billion. The force is a part of its strategic offensive arsenal. The development of the B-1 bomber as a part of the force has caused much controversy as it may turn out to be the most expensive weapon system ever developed. The estimated cost is \$ 20 Billion. The book presents a study of the issues involved.

The three issues involved are : firstly, are bombers in fact vital to US strategic forces, secondly, if they are, is their modernization urgent and thirdly, can equally effective and cheaper alternatives be provided.

Any study of a complex issue like this is bound to leave much room for differing judgements. The main difficulty is of course that the study is of necessity limited by the inevitable reliance on unclassified data. It is doubtful whether every fact and figure on which the study is based is accurate. It is also unlikely that all relevant factors are available in the unclassified data. However, within these limitations the study and its conclusions make interesting reading.

The authors conclude that the current bomber force is adequate. Further, with some modifications, it should remain adequate for a number of years to come. They see no reason to make a commitment to produce the B-1. In reaching these conclusions the authors make an in-depth study of the present system and its cost as also the projected programme and its costs. The pre-launch survivability of bombers which is a prime consideration under any system has been discussed at length.

Besides being able to survive a bomber force must also have the capacity to penetrate enemy air defences to accomplish its retaliatory task. Here it has to be remembered that the Soviet Union at present maintains the most extensive strategic air defence system in the world. It has 2,600 active air defence interceptors supported by 4,000 radars besides 12,000 surface to air (SAM) launchers—short range missile systems. The SAMs provide defences for cities and other important targets. The authors contend that the present force of B-52s has sufficient capability to penetrate these defences. They further believe that the existing bombers, if equipped with armed decoys or with long range cruise missiles, could cope with substantial deployments of advanced air defence. In fact they

stress that such air-launched cruise missiles would be the most effective way to deal with sophisticated air defences.

Whilst the book is intended to help to focus and inform the debate on this important issue and thus aid those who must decide in the matter it gives the reader much insight into the problems of strategic air forces and strategic air defences.

V.J.M.

MAN OF ARMOUR : A STUDY OF LIEUT GENERAL VYVYAN POPE AND THE DEVELOPMENT OF ARMOURED WARFARE

by RONALD LEWIN

(Published by Leo Cooper, London, 1976), pp 152, Price £ 4.95

FEW except those who served in the early years of World War II and some ardent lovers of history of armoured warfare would readily recall the name of Lt Gen Vyvyan Pope CBE, DSO, MC. Unlike Montgomery, Patton or Rommel, Pope did not live to test his theories in action. He died a somewhat obscure death in an aircrash in October 1941. In him the British Army undoubtedly lost one of its ablest tank commanders. But posterity knows little about Pope, though his successors owe a debt to his ideas on the employment of armour. Such is the fate of many a brilliant soldier who does not actually win a battle. Lewin's study of Pope is one effort to win for the latter some measure of recognition due to him. Reading through the pages of this book, which is a worthy successor to the author's books on Rommel, Montgomery and Churchill, one is concerned of Pope's wisdom and his real contribution to the successful outcome of the war.

Pope started his career as an infantry officer, won immediate awards of MC and DSO and lost his right arm in World War I. He was transferred to the Armoured Corps in 1920 and posted to Command the 3rd Armoured Car Company in Egypt. Equipped with Rolls Royce Armoured cars the unit was ideally suited to carry out its policing and peace keeping tasks. One could hardly have imagined that the company would eventually become the 6th Battalion of the Royal Tank Regiment and one of the earliest constituents of the famed 7th Armoured Division. The environment ideally suited Pope for here realistic training in comparative freedom from Whitchall was possible. Here was a vast world awaiting exploration. It promoted a sense of being involved in something real as armoured cars were now being employed far and wide. Pope undertook extensive patrolling and reconnaissance well into the desert surrounding Cairo and extending eastwards into Sinai. His reports are a vivid reminder of the immense advantage which the British ought to have had

over the Germans in North Africa. For, it is common knowledge that, until the Africa Korps actually disembarked at Tripoli, it had no significant knowledge of the desert.

Pope and his men continued learning in this kindergarten. His notes and reports on patrols from which valuable lessons were drawn relating to desert driving, passage of obstacles, use of compass, construction of bivouacs, consumption of fuel and water, tyre endurance and so on may well appear elementary today. But nothing of the kind was then available to young armoured units. A basic truth which he identified was that the only certain means of traversing the desert is by compass and speedometer. The so called landmarks are, like old car tracks, more a danger than an aid. Pope was also being imperceptibly prepared for the doctrine of free ranging mobile forces possessing a strategic potentiality which men like Fuller and Liddell Hart were developing in England.

Hitherto tanks did not have a specific status in the British Army. It was only on 1 September 1923 that the Tank Corps was constituted on an official footing. Two months later it was awarded the prefix Royal, then it adopted the black beret as its distinctive head-dress. The importance of armour had by now been well established, though no less a person than Haig would say "I am all for using aeroplanes and tanks, but they are only accessories to the man and the horse." Even as late as in the mid-twenties little in the field of modern armoured theory was obvious except to a few. It still required imagination to believe in the possibility of speed and range for tanks. Pope had, however, grasped this basic theme. At the same time he was emphatic about specific deficiencies. He had very early realized the need for infantry carried in tracked and armoured vehicles to exploit the advantage of openings made by tanks. This concept which today looks too obvious was employed by the British only after 1944, well after the Germans had tried it out. With Liddell Hart and a few others with foresight Pope had argued the case for armoured infantry as early as in 1927. But these ideas had been discarded or at any rate deferred with the result that during the thirties the concept was to motorize British infantry. Armoured divisions in the early years of the war thus went into action supported by infantry in trucks or at best in Bren carriers.

Likewise in the matter of artillery support for tanks Pope was quite clear in his ideas. It may be recalled that the 18 pounder British field gun failed to develop into a viable weapon more due to the then artillery-armour jealousies than anything else in the late twenties. Pope had pleaded the case for upgunning British armour. He strongly

advocated the need for control which needed the use of wireless telephone. He had fully realized that, without a means of commanding and controlling tanks on the move, armour could not be a formation or a force.

All this undoubtedly sound trite now. But then one has to stretch imagination very hard to envisage a time when one had to be somewhat of a prophet to foresee the possibility of fast moving tanks manoeuvring in large controlled bodies, directed by a single commander, supported by self-propelled guns and protected by infantry capable of keeping pace with and live amid an armoured battle. Pope had the vision to preach now well-established common places.

The author traces Pope's career through the years with repeated emphasis on his ideas about armour, amply illustrated by excerpts from records and conversations. He convincingly highlights British lack of preparedness in the sphere of armour in the early years of World War II, inspite of timely warnings of men like Pope.

Pope's personal merit cannot, however, be said to have been lost sight of by the powers that be. After an unbelievably short tenure of four days in 1941 as Major General AFV, Middle East Pope was promoted Lieutenant General to take over command of a Corps to be employed in operation Crusador. Within a few days he was on his way to attend general Cunningham's first 8th Army Conference. The Hudson flying him crashed into the Mocattam Hills. There were no survivors.

The real value of the book, however, lies, in its concluding chapter "Crusador : A Postscript" which calls for a careful study. Cunningham's disposal of the 7th Armoured Division, historians agree, destroyed the flower of British tank crews piecemeal. This has to be viewed in the context of what Pope always maintained "Distribution of armoured forces led to defeat in detail". The point is could Pope, had he lived, have managed to fight 30 Corps enmasse.

V.J.M.

KURUKSHETRA WAR : A MILITARY STUDY

by MAJOR P. SENSARMA

(Published by Dhiran Roy, Darbari Udgog, Ganganagar, 1975), pp 187.
Price Rs 25/-.

THIS book about the Kurukshetra War has been produced by Major P. Sensarma obviously after considerable study. There is a very interesting Foreword to it by General K.M. Cariappa (Retd.), the first Indian Commander-in-Chief of the Indian Army, who read the book in manuscript.

The subject matter is of great interest and by reading this book any one will learn a lot about our epics. There are only a few English speaking Indians who know Sanskrit well enough to be "able to assess the Mahabharata with particular reference to the Kurukshetra War". That is another reason which makes the book interesting and fascinating.

No sane soldier prays for war these days. However, one cannot help but think of the glory and chivalry of warfare in those earlier days. Warfare was not total. While a battle was in full swing, farmers would be ploughing their fields or gathering their crops or pruning their trees. War centred around the respective leaders of opposing sides. Spectators, too, could watch what was going on.

The Kurukshetra War, though it lasted only for eighteen days, caused terrible destruction. "The flower of the race was destroyed" during that short period as the contesting armies contained the leading warriors of the entire subcontinent. Then, too, no one really wanted war, unless he was power hungry or unbalanced. If the object could be achieved by diplomacy or any other means it was always preferable.

The principles of war as enunciated by Bhism, Brihaspati, Krishna and others are similar to those evolved at the present time as a result of experience. Bhism stressed the principle of 'Administration'. Brihaspati talked of 'Economy of Effort', while Krishna mentioned 'Surprise'.

While the type fount used is very good, the printing has been carelessly done. For example, after page 33 you come to page 46. You have to turn a few pages before you find page 34, on the reverse of which is 45!

The author does not have a good command over the English language. Elementary mistakes in English recur, while he does not seem to be able to use definite and indefinite articles correctly. There are also several incorrect words in the text. Does anyone know the meaning of the word 'knaive', which occurs more than once in the text? The word 'cattle' is a collective noun, yet the author talks of 'cattles'! Again, no one seems to have corrected the proofs; there are several spelling mistakes, nor is there a list of errors (errata) in the book.

The transliteration table at the beginning of the book and the list of persons, places and ceremonies of the Mahabharata at the end in Appendix II are very useful.

On the whole this is a useful and interesting publication for any soldier and student of military science, unfortunately spoilt by careless printing and poor English.

A BATTLE HISTORY OF THE IMPERIAL JAPANESE NAVY (1941-1945)
by PAUL S. DULL

(Published by Naval Institute Press, Annapolis, 1978), pp 402. Price not mentioned.

THE Pacific campaign of World War II was of such massive dimensions and variegated facets that fresh insights in the form of books are continually emerging. This is particularly so with regard to the Japanese side of the War. While the American story of the campaign has been told in detail and with the victor's pardonable hyperbole by Samuel Elliot Morrison and many others, the Japanese story has yet to be adequately chronicled for the benefit of the English reader.

Roger Pineau and Tanieichi Hata (Japanese Destroyer Captain), Mochistura Hashimoto (Sunk : The Story of the Japanese Submarine Fleet) and Masanori Ito (The End of the Imperial Japanese Navy) are about the only well-publicised authors who had so far given the Japanese version of the events in English; and their accounts add up now where near to a comprehensive narrative. The History of World War II being written by the Japanese War History Section (Boeicho Kenshujo Senshishitsu), when it is complete, would no doubt provide the most accurate version of the events as perceived and documented by the Japanese. But that monumental work, already into some ninety volumes, has yet to be completed and it will be some years before one can expect an English translation of it, even in a condensed form.

Paul S. Dull's present work, which is a concise and to some extent selective Battle History of the Imperial Japanese Navy is therefore a welcome contribution. It essentially covers the major carrier and surface battles of the war. The submarine and anti-submarine war, the amphibious landings, the shore based naval air strikes and even the minor surface skirmishes have been entirely excluded. To that extent the title of the book has to be considered a trifle over-blown.

The great merit of the book lies in the meticulously researched manoeuvring and engagement details of the Japanese units. Earlier books, including Morrison's Opus, have contained glaring mistakes even to the extent of misidentifying minor vessels. Professor Dull's mastery of the Japanese language and access to microfilmed original Japanese Documents like command reports and ships' logs has enabled him to correct many an earlier error and reconstruct the battles much more as they actually took place. The track charts are superb; uncluttered yet conveying a graphic picture of events. The Photographs are revealing and fresh, as the bulk of them are from Japanese sources.

What the book lacks is vivid personal portraits of the Japanese Commanders and behind-the-scene details of crucial battle decisions. Nagumo on board the Akagi remains as remote and inscrutably oriental as in Western narratives. Few will deny that Commanders like Nagumo, Kondo and Tanaka and key officers like Fuchida, Genda and Hara were dynamic even if not colourful men, whose personalities and cerebral processes hold infinite interest to any serious scholar of the Japanese Pacific Campaign.

The battle doctrine and tactical thinking of the Japanese Navy has also been largely left uncovered. For example, the technical reasons for the superiority of Japanese night gunnery and long distance torpedo attacks have been catalogued as in many earlier books, but the concepts and training which blended them into battle effectiveness have not been explained. Obviously those kinds of insights cannot be gathered through research of microfilmed records, however extensive and painstaking they might be. They await an author who personally interviews the men who fought the war.

V.K.

THE MARINE OFFICER'S GUIDE
by COLONEL ROBERT D. HEINL JR. USMC
(Published by Naval Institute Press, Annapolis, 1977), pp 713.

Every United States' Armed Service has produced a semi-official hand-book for its officers and some for its non-commissioned men as well. They provide an invaluable single point reference source for the myriad doubts a young officer has about the non-technical aspects of his profession.

The Marine corps guide under review is among the best of its genre that I have come across. Its 713 pages are packed with an amazingly varied lode of information. The range covers the organisational details from the National Security Council down to the smallest platoon, the history and traditions of the Corps, details of bases and stations, military justice, leadership pointers, pay and travel rules, ceremonial, career planning, life in the field and afloat, work planning, social life and a lot more. And all of this has been presented in a most direct, refreshing style geared to hold the interest of the normal service officer with his inbuilt switch-off mechanism towards official verbiage. There is a complete absence of cliches as well as reproductions of regulations and statutes. It would be a great service to our young officers if similar books on each of our three services could be brought out. A lot of time now wasted in the initial years on finding ones feet in the Service would be saved and can be channelised into the pursuit of professional excellence.

For the non-Marine reader, the great fascination of the book lies in the insight it gives into the internal culture which has made the US Marine Corps the unique fighting force it is. Unlike the other services, the Marines have rarely had to depend on the draft. Psychologists might say that this is because in every nation there is a group of people who prefer stern, simplistic, authoritarian ethos to one of permissiveness, pluralism and intellectual uncertainty, perhaps; but on the other hand it could just as well be that traditions of dedication, camaraderie and elitism could keep an organisation riding high even when the general conditions are adverse. The internal environment of the corps as brought out in the book leaves the reader with the impression that the truth is complex and lies somewhere between the two extremes.

V.K.

AYO GURKHA

by J.M. MARKS

(Published by Oxford University Press, London, 1971), pp 183. Price £1.00

THIS is J.M. Mark's first book for young readers. It deals with a young fourteen-year-old boy, Aitalang Limbu, who manages to join the British Gurkhas though under-age. He is soon involved in hunting terrorist in Malaya. Having taught himself the art of tracking, he was an asset to his company and was instrumental in hunting down a bandit, 'One-Eye'; this resulted in the fulfilment of his ambition and ultimate realisation of his desire for possession of land.

Marks is particularly well-equipped to write this adventure story having served with the Seaforth Highlanders during World War II and for eleven years thereafter in the 10th Gurkha Rifles, six years as a company commander in Malaya and also as a recruiting officer. He gets the atmosphere of the jungle, swamp, tin-mines and so on of Malaya, just right. Also as he had studied Limbu Kura and Tibetan and trekked in remote areas of N.E. Nepal while he was serving with the Gurkhas, a shepherd's life and the countryside in Nepal have been vividly described.

Though the story is fictitious, it is based on actual incidents and the author's own experiences.

The illustrations in the book are by Goray Douglas who has an international reputation for his paintings and etchings of Tibetans, Lepchas and Nepalis. They are undoubtedly realistic and appropriate. Incidentally, Goray Douglas had a Scottish father and a Burma-Gurkha mother. He left Nepal in 1941 and was last known to be living in Darjeeling.

There is a useful Glossary of Gurkhali and Malay terms at the end of the book. It would be advantageous to go through this glossary before reading the book.

The book, though for young readers, is one which any soldier, not only a Gorkha (as we say it), will find excellent reading.

J.A.F.D.

SECRETARY'S NOTE

ENROLMENT OF MEMBERS

More than a thousand officers become members of the Institution every year but only to get a seat in one of the Correspondence Courses run by the Institution. As soon as the courses are over, majority of these drop over and very few renew their membership and that too for one of the course again. The result is that the total membership never increases. May I request all such members to continue to renew their membership either on year basis or become life members. This would help the Institution.

RECEIPT OF USI JOURNAL

I am glad to say that there is marked improvement in the receipt of the USI Journal by the members because very few copies are now received back. However, there is still scope for improvement and I would like to achieve the target of "No return". Members should not therefore forget to notify the change of address as soon as it occurs.

LETTERS TO THE EDITOR

I have requested members a number of time to let me have their comments, criticism and suggestions for improvement in the USI Journal, but there has been little response. I would once again urge upon them to send their criticism freely about the articles published in the Journal. I would publish these so that the writers also know the other view point. A healthy dialogue through these columns is a better way of getting to know all the sides of a picture.

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