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OCTOBER-DECEMBER 1976

INTER-SERVICES COOPERATION AND ALL THAT

(A Top Defence Management Myth)

BRIGADIER NB GRANT (RETD.)

EVER since Independence, our Armed Forces have never stopped bragging of the inter-service concept of our defence organisation. In support of our claim, we proudly display the fact that, unlike what is prevalent in the more modern armies of UK, USA, and USSR, the officer in our Army begins his career in an inter-service training institution namely the NDA*; he graduates from an inter-service college viz the DSSC**; and finally ends up by attending an yet inter-service institution of higher learning, namely the NDC***. We then go on to proclaim that, even at the apex body, we have the Chiefs of Staffs Committee with its Chairman being elected in rotation, thus ensuring inter-service hegemony.

On the face of all this, therefore, we certainly give an appearance of having a well knit inter-service defence organisation, a model for other countries to copy; but there the picture ends. The irony is that, inspite of all the above, for all intents and purposes, we still train and fight as separate and independent Services.

About a year ago, there was an announcement in the Pakistan press, that it has been brought out by a study team, that Pakistan's defeat in the 1971 war was mainly due to the lack of adequate co-ordination and liaison between the three armed forces, as a result of which it has now been decided, that all of them should have their headquarters in the same town, if not under the same roof. In our country, although the headquarters of the three Services have always been located in the same town, the overall defence organisation is still not in keeping with the military thought now accepted as a truism throughout the world, namely, that modern war must be fought by all the three Services acting together as one under a single commander. The old ideas of separate co-operation being effected by three equal and independent service commanders acting in concert, have been discarded as impracticable by all the great powers.

In keeping with our policy of non-alignment, and due to the constant military threat of some of our neighbours, it is no secret that, today we

*National Defence Academy.
**Defence Services Staff College.
***National Defence College.

are forced to spend nearly a third of our national budget on defence. It is also however no secret, we cannot afford this expenditure. Nevertheless, if we have to have an army, it must be the best that our meagre finances can provide.

Today India can claim to possess the fourth largest army in the world, and as such, in the normal course, one would expect, that we should also take our place as the fourth most powerful nation of the world. We have the man-power, national resources and an above average native intelligence. Coupled with this, the fact that our officers and men have proved themselves time and again as being first class fighting material, puts us in an enviable position of possessing the potential of becoming a first rate world military power. However, to achieve this, we must also have an integrated defence organisation, which alone can ensure proper co-ordination at the political, service and economic level, of our vast military potential.

Although in the past many articles have been written on the subject, we have never really seriously come to grips with this problem, and have taken the attitude of "why disturb the existing structure, when it has successfully seen us through three major wars". The aim of this paper is to re-examine this top management 'myth' of inter-service co-operation, and analyse this in all its aspects.

In this article an attempt has been made to enunciate only the fundamental managerial issues which require reviewing, and on which a dynamic concept of integration of the entire defence organisation must be based, in order to ensure maximum use of the vast sums of money which are being spent on defence, and which our developing economy cannot today really sustain, these are—

a. integration of the managerial effort of the three Services to provide an effective machinery for their proper co-ordination;

b. integration of the various Defence Committees at the top, so as to ensure an effective policy making organisation at the governmental level;

c. integrating the various managerial responsibilities of the civilian secretaries in the Defence organisation, so as to avoid duplication of effort:

Each of the above issues are discussed in the subsequent paragraphs. It is felt that, once the fundamental principals enunciated in them are accepted, there can be several permutations and combinations for their detailed implementation.

INTEGRATION OF THE THREE SERVICES

Even though as stated earlier, military thought throughout the world now accepts, that modern war must be fought by all the three Services

acting together as one under a single commander, we in our country still stick to the old idea of separate co-operation being effected by three equal and independent Service commanders acting in concert. The attendant disadvantages of such system namely indecision, lack of cohesiveness, loss of time, and in fact all the inherent defects which one normally must expect when there is no central unitary control and direction, completely preclude its retention in the present day when any delay and indecision concerning defence, is more or less certain to prove disastrous. This will specially be so in a case like ours where any war is expected to be a short one, as such there will be very little time off any adjustment before it ends.

A major drawback in the present Indian defence high command is, that it does not really provide an effective machinery for the proper co-ordination of the effort of the three Services. Most countries have now introduced unification of Services at the top by appointing a professional expert as Chief of Defence Staff. In India in the absence of any such arrangement, we must rely on the civil servants in the Ministry of Defence to resolve any conflicting claims or recommendations of the Services. Not unnaturally the Ministry of Defence gradually assumes the duties and status of an inter-service arbitrator and director, a responsibility for which it is not constituted. In this context, the Secretary, Ministry of Defence, virtually functions as a Chief of the Defence Staff would. No matter how brilliant an administrator he might be, it is asking for the impossible, and indeed unfair, to expect him to convert himself overnight into the chief executive of the nation's defence mechanism.

In the past, the differnt constitutents of the nation's armed forces developed independently and, during war, inter Services coordination was somehow managed, though with considerable difficulty. Even during the last 14 days war with Pakistan, although wide publicity has since been given to the 'intimate' co-operation of the three Services in general, and of the Army with the Air Force in particular, the cooperation' really boiled down to one Service in distress calling for help, to which the other Service responded, though not always without reservation. Luckily the war was too short to test the strength and durability of this cooperation 'in a long drawn out conflict. However, any lapses that may have occurred in this respect, were not so much due to the reluctance of one or the other Service to come to the aid of the other, but due to the present organisational concept, which is not conducive, both psychologically and operationally, to that intimate cooperation needed for modern wars. For example, we have Western Army Command in Simla and Western Air Command in Delhi, with liaison officers from one headquarter attached to the other. Similar pattern exists between the Eastern Army Command at Calcutta and the Eastern Air Command at Shillong, as also between the Central Army Command at Lucknow and the Central Air Command at Allahabad.

Thus in such a set-up, cooperation between the various Services depends not on any unified operational command, but on the art of liaison.

The very fact, that at a crucial stage of our military history, it was found necessary to extend the tenure of two Service Chiefs on the ground (so we are told) of maintaining cooperation between the Services, indicates, that with us, Service cooperation appears to be a matter of personalities, rather than it being inbuilt in its organisational structure.

Some leaders of military opinion, e.g. Canada, recommended a complete merger of the fighting services to achieve cotrol, flexibility and economy. The trend of development however appears to be inclined towards 'unification' rather than 'merger' of the Services. The recent reorganisation of higher defence structures in Britain, the United States and France has, in fact, followed the principle of unification.

If we agree to follow the UK system of unification, then we must create a Chief of Defence Staff (CDS) who should be in a position to give orders to the individual Chiefs of Staff of the three Services, and acting with the Joint Chiefs of Staff and through the Joint Defence Staff, issue directives and instructions to the commanders of such unified inter-Service commands as are set up in the country. This staff would not only be planning staff but also an executive one, and would thus be responsible for giving shape and effect to the orders of the CDS.

Integration of the Top Policy Making Organisation

Until very recently for all practical purposes, the highest policy making body in matters of defence was the Defence Committee of the Cabinet. This Committee has since been amalgamated with the Committee for Foreign Affairs, and a combined Committee for Defence and Foreign Affairs has been formed.

Today, next to the above Committee is the Defence Minister's (Inter-Services) Committee with the Defence Minister in the chair, and the two Deputy Ministers, the three Service Chiefs, the Defence Secretary and the Financial Adviser as members. Lower still down the chain is the Chiefs of Staff Committee, which is the only purely professional body, but whose functions are merely advisory with no powers of decisions.

It will at once be apparent, that the system of having separate Committees is not conducive to administrative efficiency, and tends to aggravate the inter-Service differences and to concentrate executive authority in the bureaucratic set-up of the Defence Ministry. The managerial responsibility for resolving the conflicting interests of the individual Services, and striking a balance between the various requirements of land, sea and air forces is thus placed upon the Defence Minister, who will then be compe-

lled to seek a compromise, in the absence of unanimity on any controversial issues in the Chiefs of Staff Committee.

To rectify the above defects, it is suggested that, the Defence Minister should have only one committee dealing with all policy matters in an integrated manner. We could call this the Council of National Defence (CND). The Defence Minister should be the Chairman of the CND, and its membership should include the Minister for Defence Production and Supply Chief of Defence Staff, Chiefs of the Army, Navy and Air Staff, Financial cum-Economic Adviser, Scientific Adviser and the Controller General Defence Production and Supply. At the executive level, the Chief of Defence Staff must remain the principal military adviser to the Defence Minister and would also act as the principal coordinator of all inter-Services activities, and have the power to give decisions on behalf of the government on all Service matters which do not require sanction by the Defence Minister.

Integration of the Secretarial Responsibilities

At the apex of our defence high command is the President who is the Supreme Commander of our armed forces. He exercises this command through the Cabinet. Broad matters of defence policy are referred to the Defence Committee of the Cabinet, but the normal day-to-day control of the Services is exercised by the Defence Minister through his staff of secretarial officers who are all civil servants. Besides these secretaries, financial advisers representing the Finance Ministry are also attached to the Defence Ministry to render financial advice as also to exercise financial control. Working under the Defence Ministry but as three completely separate entitles, are the three Service Headquarters.

It is axiomatic, that in a democracy, the civil government must be supreme. In the Western democracies, this implies the supremacy of the elected members of the government, namely the Minister, the Cabinet and the Parliament. In India, unknowingly, we seem to have gone a step further, in that, under the term 'civil government', we unconsciously also included the civil servant, about which there can be no doubt that this was never the intention when we became a Republic. Possibly one of the reasons for this fallacy was the fact that, as in the other democracies like the UK and USA the ministers are known as 'Secretaries', our Civil Servants believed that this was synonymous with their own Indian ranks, namely 'Secretaries'.

Thus, unlike the procedure in any other country in the world, our defence services are hamstrung by three tiers of managerial control—ministerial, secretarial and financial. Ministerial and financial controls are of course necessary in any democratic organisation, but this novel feature of secretarial control is peculiar to us, and is unnecessary, and what is more,

uneconomical. In this respect today the position appears to be that, although the civilian administrators in the Ministry of Defence have a very important say in the strategic planning, coordination of the three Services, financial control and in almost all day-to-day policy matters affecting defence, nevertheless they take no responsibility for any military failures. To illustrate this after the NEFA debacle in 1962 and for many of the failings in the 1965 conflict with Pakistan, although a number of military heads rolled, not a single civil servant of the Ministry of Defence, or for that matter Finance, took the blame for any of the failures.

CONCLUSION

No matter which way we view our defence problem, one fact stands out, and on which there can be no two opinions, namely, that our developing economy cannot really sustain the military force required to ensure security of our borders, within the framework of our foreign policy of non-alignment. Nevertheless, as we are compelled to maintain such a force due to the belligerent attitude of some of our neighbours, we must make it doubly sure, that our national resources are used to their optimum capacity, and that there is no overlapping of effort and duplication of responsibilities. It is in the latter two aspects, that our defence organisation requires complete re-orientation.

Independently, the three Services are fully prepared for battle, but the organisation needed to mould them into a unified efficient fighting machine requires reorientation. This cannot be achieved merely through unification of the three Services, but by the complete integration of the entire defence organisation in all its various aspects.

ORGANISING FOR EFFECTIVENESS—AN OUTLINE REVIEW OF THE ARMY ORGANISATION

By Brigadier R.A. Rajan (Retd)

THE aim of this paper is to examine the organisations in the Army and suggest changes as necessary to make them more viable and responsive to functional requirements.

All of us are familiar with PARKINSON's laws and PETER's principle. To recaputulate, these are reproduced below :—

(a) *Parkinson's Laws*

"(i) Work expands so as to fill the time available for its completion.

(ii) An official wants to multiply subordinates not rivals.

(iii) Officials make work for each other.

CN Parkinson.

(b) *Peter's Principle*

"Every man reaches his level of incompetence"—

Lawrance J Peter.

We amuse ourselves reading the above illuminating truths. Some feel as if they are reading contemporary biographies. With the background of these truths, if we examine the present pattern of our organisations in the Army and their behaviour, we could infer that all the arms and services have reached a state of working conditions or a balance where mutual existence is just possible with varying degree of power.

Law of Dependancy

The above state of balance (or imbalance) is being maintained by each arm and service by exerting influence on others to make them feel that they are dependent on them. In other words, charter of duties are so managed that one could exert power over others thus creating a dependancy on them. In the course of the struggle for this power, some have voluntarily added responsibilities and others acquired authority without corresponding responsibilities. Thus we all exist with various levels of authority and responsibility though these two are not balanced. Because of the unequal distribution of power, all the arms and services stay in a

state of tension or dissatisfaction since there is a feeling of superiority and inferiority amongst them.

The above state of power or influence on one another is the "Law of Dependancy". We are all functioning within the frame-work of this law. We could infer from this behaviour pattern that in certain cases we are more eager to perform jobs which would create this dependancy than legitimate duties. Some even make you feel that you are being favoured while in actual fact they are fulfilling their role and responsibilities.

Although the organisational behaviour and the Law of Dependancy has been expounded in a lighter vein, it could have far reaching effects if allowed to continue. To have competition in organisations is healthy. This properly created and supervised would add vitality to organisations. But conflict and friction in any organisation is injurious to performance all-round. It is, therefore, for consideration whether we should allow the Law of Dependancy to continue to operate in our organisations.

Organisation—Definition

In the Army, we generally describe an organisation as a structure showing the chain of command. In effect, an organisation is something more than a structure and chain of command. It could best be defined as a dynamic process where-in human beings inter-act with dedication, zeal, enthusiasm and un-inhibited communication and mutual confidence to achieve goals set for them.

Technology keeps changing and so are people in organisations. Hence, organisations should keep adjusting to these environments to be effective and economical.

ORGANISATIONAL ANALYSIS

Impact of Technology

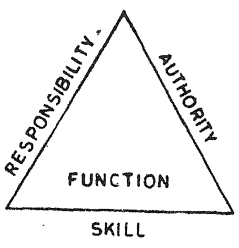
During the period commencing from Second World War to this day, the Army has undergone tremendous change in regard to technology and weapons, engineering and logistics systems. These changes appear commendable and seem to have increased the fighting potential of the Army. However, this capability is only comparative as it is normally assessed with the capabilities of our likely enemies. The assessment is not optimal. Ever since 1947, the arms and services have been tailoring their own organisations to suit added responsibilities, new technology and changes forced by other reasons. Consequently we have had appreciable increase in weapons and equipment systems, rank structure and manpower in various arms and services. Most of the expansions seemed to have taken place in isolation without detailed scrutiny for duplication or inter-dependencies by the coordinating authority. Considering the fact that

minimal changes have taken place in the organisational patterns, division of responsibility amongst arms and services, maintenance and repair concepts and pattern of logistic support, it is my considered view that if we examine these aspects critically and make necessary changes, we are bound to increase the effectiveness of arms and services appreciably and thus the fighting capability of the Army at large. Besides, it might be possible to effect saving in manpower and expenditure. The saving can be used to increase our fighting capability by inducting new weapons and equipment systems or manpower or both.

BALANCING FUNCTIONS

The basic level of an organisation is the activity. Related to their dependencies and coordination to achieve limited goals these are grouped into functions. Functions are again harnessed into departments to achieve larger aims. In our parlance, individual trades could be termed activities, the role of a unit as a function and a formation comprising of various functional units as a department. However, the basic ingredient of an organisation is a function.

The Army today is based on systems entailing sophisticated technology. Higher the level of the Army Organisation, greater is the bias on the knowledge and application of technology. The organisation should, therefore, be patterned taking the above into consideration. In any function there are always three basic components – viz firstly skills to perform an activity or a number of activities ; secondly a satisfying responsibility to match the skills ; and lastly corresponding authority to fulfil the responsibility. If these three components are not balanced, we will meet with dissatisfaction and loss of efficiency in organisations. These components of a function are like three sides of an equilateral triangle—illustration below.



Organisations at functional level should be so structured so that where technical skill predominates in a function, the control rests with

people with this skill. Where people of non-technical skill predominate a function, the non-technical skill should control the function. At the directional and conceptual levels in the Army it is not so important who controls the function as long as the decision maker has sufficient knowledge, application and comprehension of all technological systems under his control and their impact on decisions at those levels. The ability to organise and influence human resources to inter-act and achieve common objectives would play a major part at higher levels of management.

Change in recruitment pattern and behaviour

Prior to independence, bulk of soldiers were drawn from villages. The level of education and attitude to discipline were of a certain pattern. But during the course of over two decades, a large influx of men have been inducted from urban areas with changed mental outlook and attitudes. The educational standard has also increased considerably. Similarly there had been a change in the pattern of recruitment to officer cadre. The pre-war cadre was wholly drawn from a class with set educational and family background. Today the officer class is drawn from varying backgrounds including a fair percentage of induction from other ranks cadre. These factors had altered certain values of military leadership and behaviour at all levels.

Reluctance to change

Hiccolo Machiavelli once worte—

> "It must be considered that there is nothing more difficult to carry out, nor more doubtful of success, nor more dangerous to handle, than to initiate a new order of things. For the reformer has enemies in all those who profit by the old order, and only lukewarm defenders in all those who would profit by the new order ; this lukewarmness arising partly from fear of their adversaries, who have the law in their favour; and partly from the incredulity of mankind, who do not truly believe in anything new until they have had the actual experience of it".

Radical changes are never acceptable to orthodox management. Fear of the unknown forces the meek to keep to proven concepts. This behaviour pattern in human beings is understandable.

Most of our studies become controversial as the recommendations are not acceptable to all parties affected. Status quo is, therefore, maintained to satisfy all concerned. This happens due to two reasons- viz the arms and services do not accept any changes in their roles since it would affect their manpower and rank structure. The other reason is the hesitation on the part of the decision maker to depart from proven concepts.

ORGANISATIONAL ANALYSIS

Fear of losing rank structure and the reluctance to change existing concepts are natural phenomenon. But if we want our organisations to be pruned for the roles, be effective and economical, dynamic and virile, we have to change. Whether it hurts one corps or benefits another, it should be accepted in the overall interests of the Army. We should, therefore, examine our organisations and functions in a rational and unbiased manner disregarding our ill-founded and narrow loyalties to the arms and services. In this paper an attempt has been made to examine certain salient features of our precepts and practices in our organisations. The primary aim is to focus the attention of decision-makers on certain major organisational concepts in outline and likely areas for detailed studies.

Organisational analysis consists of examining the following :—

(a) *Manifest*—The situation as formally described in the roles.

(b) *Assumed*—The situation as assumed due to changes in technology, environment and balancing of skill responsibility—authority triangle and anxiety to fulfil that responsibility.

(c) *Extent*—The situation as revealed by systematic exploration and analysis.

(d) *Requisite*—The situation as it would have to be to accord with the real roles to be performed economically and effectively.

The above four steps are only guide lines which have been kept in mind while reviewing the organisations. In addition, we should also consider the requirement of balanced and well defined functions. Also while deriving functions, the following factors should be borne in mind :—

(a) Operational environments.

(b) Clear understanding of technical and non-technical functions.

(c) Where non-technical function predominates technical functions, the control of the overall combined function should rest with non-technical functional head and vice-versa.

(d) The functions should be as far as possible wholesome with least dependancy but compatible with operational environments and economy. Overlap of functions and dependancy should be minimal and take into account economic and effectiveness factors.

SYSTEMS APPROACH

Any major re-organisation contemplated should look at the Army as a complex system. Based on the objectives laid down for this system, we should then identify the sub-systems required to fulfil these objectives. These sub-systems should be put through an organisational analysis in

regard to the roles and responsibilities of the current organisations to identify the imbalances that exist in the skill—responsibility—authority concept of a function and eliminate duplication of effort.

SUB-SYSTEMS

Considering the Army as a system charged with the responsibility to defend the country against external aggression, we could examine the present sub-systems which are the arms and services. To a professional soldier it would be obvious that the basic branch required to fulfil the role of the Army is the Infantry. This branch is required to occupy ground, maintain vigilant surveillence of the sensitive border areas, occupy defensive positions and when required carry out offensive operations. Similarly the requirement of armour and artillery as these are now constituted would be obvious. Considering the employment of these branches in operations, these are predominently non-technical functions. Where technical skill is inherent or affiliated, these are of supporting nature. The present pattern of organisation and command and control of Infantry, Armoured and Artillery organisations need not be disturbed. However, in view of the extensive use of technology in weapons and equipment systems, the rest of the branches appear rationalisation in regard to their roles and as a result thereof their organisations.

To sustain Infantry, Armour and Artillery in their roles the following sub-systems are necessary :—

(a) Combat engineering support.

(b) Electronics engineering support.

(c) Mechanical engineering support.

(d) Medical care.

(e) Logistic support—maintenance and repair of equipment, provision of spares, equipment and stores, supplies and POL.

(f) Branches such as Judge Advocate General, Postal, Animal Transport, Pioneers and Farms.

Besides the above factors, there are other associated areas and organisations which need scrutiny. These are also discussed under the heading miscellaneous points.

COMBAT ENGINEERS

The role of combat engineers would be obvious. Their major functions include civil engineering works and water supply in the field, mine laying and breaching, bridging, obstacles, tracks, air-strips and provision of electricity to formation HQ as authorised.

All functions except the responsibility in regard to electrical engineering would by and large be covered by the heading civil engineering.

These functions could without imbalancing the roles and responsibilities of other branches such as Signals and EME could be grouped under the civil engineers. It is for consideration whether we could combine the electrical engineering portion of their responsibility with a branch which has to possess reasonable knowledge and expertise of electrical engineering concepts and practices to fulfil other roles connected with electronics. This matter is discussed in depth later in the Paper.

The role of the Military Engineering Service (MES) is similar to the Public Works Department (PWD) in the civil. Perhaps this service was created during the British days when the PWD and CPWD were not designed or capable of looking after the peculiar requirements of British and Indian troops in the cantonment areas. In view of the changed conditions prevailing ever since Independence and the present capability and capacity of the Central PWD and PWD in various States, it is for consideration whether we could obtain these services from them in most of the places to-day. Paying for these services would be much cheaper than running our own services. However, adequate safe-guards for priority and quality of service should be ensured by legislation. If this concept is acceptable, the question would arise whether or not the Combat Engineers require the degree of training and specialisation and if so how would they be employed. In spite of hiring services from the CPWD and PWD, the Combat Engineers should have the nucleus capability and organisation to take on unforeseen engineering tasks to the same extent of engineering skill and management as the CPWD and PWD. For flexibility of employment of highly skilled Combat Engineers, their lateral induction to CPWD, PWD and other organisations could be explored. Further the role of the Border Road Organisation could be enlarged to cover certain MES responsibilities in sensitive areas.

ELECTRONICS ENGINEERS

From the age of foot-messengers and pigeon service, the Signals have now grown into a technical branch manning and maintaining sophisticated communications—electronics equipment. They have now the responsibility to plan and manage the Electronic Data Processing Systems required for the Army. From the exclusive user agency, they have transformed into communications—electronics engineers. Their continued interest in regard to forecasting, planning and execution of communications—electronics support would indicate not only their anxiety to ensure reliable and rapid signal communications but also the inherent responsibility to fulfil their role effectively. The types of courses run and the syllabi of courses at the STC and MCTE would prove that they are no longer the users but belong to a technical branch. In fact lack of progressive organisational analysis has resulted in parallel development of competence in Signals and Electrical and Mechanical Engineer Corps. The imbalance in Skill - Responsibility

—Authority triangle is maximum in this function—a function to provide communications—electronics support to the Army. This function has now become predominently an engineering function. The operating part is minimal and could form part of the engineering function.

Further the era of providing radio communications on the low and high frequency spectrum have been outmoded. Radio speech, telegraphy and video transmissions are now mostly in the higher spectrum going into UHF and higher regions of frequency. The present modular concept and its impact on maintenance and repair echelons also dictate changes in the present organisation. Considering these aspects and the closeness of proximity to the frequencies used by non-signal communication systems such as surveillance, radar and gun control equipment, it is necessary that the management of all electronics systems are entrusted to one agency.

Although at various stages and levels the above aspects had been examined in the past, no objective analysis or decision had been taken probably due to divergent views of the SO-in-C and the DEME. Large areas of duplications in effort and equipment, therefore, exist at present. The present responsibilities of Signals and electronics roles of EME should be combined and a new branch designated Corps of Electronics Engineers formed. Electronics Engineering has become specialised and it is only fair that this is separated from the present combined electronics and machanical engineering function. Since electronics engineers should perforce have proficiency in matters concerning generation and provision of electrical energy, electrical engineering function now performed by Corps of Engineers could easily be encompassed within the purview of electronics engineers.

MECHANICAL ENGINEERS

Mechanical engineering function has become complex. The range of equipment and transport used in the Army today requires mechanical engineering function to be given to a separate branch. The operating part i.e the forecasting and planning of demand of mechanical equipment and transport and provision of non-technical manpower such as drivers is not comparable with the complexities of technology and vastness of resources of technical manpower required to fulfil the mechanical engineering function. The present mechanical engineering component of the EME Corps as a separate branch should, therefore, cover the function of the Army Service Corps (ASC) in regard to their role of provision of transport support. We should also consider the feasibility of this Corps having the responsibility for providing transport support even in case where the transport is at present integrated with the units. Depending upon the quantum and technical nature of the transport, companies or platoons of mechnical engineers could be formed and affiliated to various user units as required.

MEDICAL CARE

The present organisation is sound and needs no major change. The Army Medical Corps (AMC) is engaged in the most important role of preventing disease, looking after and curing the sick and thus making available the miximum of human resource to the organisations at all times. The life of all ranks in AMC entails immense stress and strain, dedication and compassion and above all the understanding of the behaviour of the sick person. While some are gifted to assume the role, many require sustained training and experience to acquire the qualities. These factors are often not understood by patients.

In the Hospital Management there are three groups involved in achieving the common aim outlined above. Firstly administration, secondly specialists, other doctors and the nursing staff and thirdly the most important of all the patient. The result of achievement of the aim of the Management depends upon the harmonious inter-action of these three components. The greater the understanding and cooperation, the higher will be the efficiency. Symbolically it could be depicted thus—

A—Administration.

B—Specialists, doctors and nursing staff.

C—Patients.

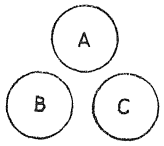


Fig. 1

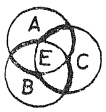


Fig. 2

Fig. 3.

Quantitatively the efficiency will be determined by the area of 'E'. While Fig 1 depicts an exaggerated situation of no coordination and Fig 3 complete and total understanding, Fig 2 represents the general pattern which would prevail. The endeavour should be to maintain as much area of 'E' as possible of Fig 2 since situation in Fig 1 cannot be tolerated and achievement of conditions of Fig 3 is impossible.

Hospital Management is a technical and complex subject. A professional study in depth involving personnel of all the three groups will be worthwhile and will bring out recommendations which would make the functions of AMC more effective and efficient.

However some of the suggested areas for study are given below:-

(a) Specialisation in medical profession has diversified considerably. It is for consideration whether specialisation to the present degree in the Services is necessary considering the fact that some working arrangements could be made with existing civil resources.

(b) There appears to be a requirement of combatised staff in major hospitals to look after the diet of patients, cook houses and assist

the nursing staff in the family wards. The present arrangement appears inadequate.

(c) There is a tendency on the part of certain category of patients to continue staying in the hospitals although fit for discharge. There are cases which merit hospitalisation purely for nursing and compassion. The later category are mainly the aged pensioners who could be looked after in a separate wing classified "Pensioners Home". Such homes could be built adjacent to the hospitals and looked after by Social Organisations financed by the Army Wives Welfare Association.

(d) Military Hospitals are already feeling the load of ex-servicemen. The latest decision to commit their resources to look after the dependent parents would further enhance their problems and affect their effectiveness in looking after serving soldiers. This problem should be studied in depth and some compensatory factor should be incorporated to discourage large scale increase in admissions of this new category of people. Identification of personnel, particularly in cases where the serving soldiers do not accompany will be difficult. Some form of identity papers authorising entitlements may be necessary.

LOGISTIC SUPPORT

Maintenance and Repair of Equipment

We have today the concept of maintenance, light repairs, field repairs and base repairs. While the maintenance and light repairs are normally the responsibilities of the users, the field and base repairs are the responsibilities of the EME Corps. While in certain cases the light repairs are done by EME, in certain other cases the field repairs are carried out by users. While the users are responsible for operational functions in conjunction with equipment, the responsibility to keep the equipment in operational fitness at all times rests with the EME Corps. While this concept by and large meets the bill in case of functions where operational aspect predominate technology, it does not satisfy the requirement of functions which are technology oriented. In case of technology oriented functions, it would be advantageous to concentrate operating, maintenance and repair functions together with one agency. As for the non-technical functions, the maintenance and repair aspects should continue to be that of the respective technological functionary.

While the efficacy of maintenance and light repairs of users are judged by an outside agency (EME Corps), the efficacy of the field and base repairs is inspected by the same agency responsible for these repairs. Even during annual inspections of units by Commanders the aspects of operational fitness of equipment are done entirely by the technical persons who are responsible for those functions. This anamolous situation would be removed if we keep the inspection aspect under a separate agency.

Our experiences also reinforce the following logical deductions ;-

(a) The function of provision of communications-electronics support is essentially an engineering function as it predominates the non-technical aspects. It would, therefore, be logical to entrust this responsibility to electronics engineers. This branch should be formed by combining the Signals, EME and Engineer branches engaged in electronic function. Combat engineers should also be organised in the same manner.

(b) The second function of the EME which covers mechanical engineering should cover provisions of transport support, its maintenance and repairs. The engineering aspects involved in giving this support predominate the non-technical functions such as planning and provision of transport and manpower requirments of drivers. The mechanical engineering function should cover these non-technical aspects also.

(c) Inspections of technical functions should be carried but by an agency other than the branch responsible for that function under the overall control of a separate Department for Technical Inspections. In case of non-technical functions, the present systems of inspection by superiors would be sufficient.

PROVISION OF SPARES, EQUIPMENT AND STORES

At present the Army Ordnance Corps (AOC) is responsible to procure and supply all items of equipment, stores and spares except certain ranges of engineer items and medical equipment. The Corps handles over five lakhs of items for the Army. In spite of direct participation and influence of commanders at all levels and extensive local purchase powers resting with appropriate provisioning officers, the state of availability of equipment and spares to users and repair agencies is not satisfactory. Besides the range of items, there are problems of indentification and substitution, appreciation of vital nature and urgency of the item in the context of operational fitness of an equipment. These problems are the direct result of centralising such a complex and wide range of items under one agency. It is also not fair that the AOC is charged with such complex problem. Further the sense of urgency and anxiety felt by the users and repair agencies for the items are naturally more than the store-holding agency. It is, therefore, felt that the responsibility for forecasting, planning, provisioning, holding and distribution of equipment and spares peculiar to functional authorities such as Combat, Electronics and Mechanical Engineers should rest with the functional authorities for their respective items. The Army Ordnance Corps should only deal with common user items such as small arms, ammunition, clothing, general stores, supplies and POL. The present responsibilities of AOC should be bifurcated and shared by Combat, Electronics and Mechanical Engineers and the AOC. The reformed AOC may be designated Army Logistics Corps. This Corps should handle supplies and POL items also,

JUDGE ADVOCATE GENERAL

This is a professional function and need not be altered. However, there seems to be some scope for off-loading by 'A' Branch certain disciplinary matters particularly on matters relating to major incidents direct to this Branch right from the early stage so that investigation and other connected process move with speed and in the correct lines. The decision on assigning such responsibilities should rest with formation commanders. The present bias on advisory function should be transferred more of involvement in staff function.

POSTAL

There is no change required to the existing arrangements. However, the feasibility of integrating the functions of the newly created Directorate of Group Insurance and the Directorate of Postal Services should be examined. Since the Postal Branch has already been in the business of Postal Insurance for a long time, such a step of integration will enhance the responsiveness of Insurance objectives and also result in saving in manpower. We should also examine possibilities of providing the same cover through some special provident fund scheme as it would be more economical. Such schemes already exist in certain departments.

ANIMAL TRANSPORT

The requirement of AT is likely to continue probably on a reduced scale progressively as road communications improve. At present there are two components involved—the ASC and the Remounts and Veternary Corps (RVC). It is for consideration whether the functions involved could be combined and the overall responsibility given to the RVC. It may also be worthwhile considering the responsibility of maintaining Dairy Farms and bulk-supply of milk to this re-constituted organisation. The present system of having contracts for milk could be dispensed with and services could be made self-sufficient in this requirement. In effect we would relieve the already strained civil resources in this commodity. At a later stage we could also consider having our own poultry and sheep farms to meet the requirement of these items for the services under the aegis of RVC. The retail distribution to troops could be the responsibility of the Army Logistics Corps.

FARMS

At present the role of Military Farms Corps is restricted to procurement of fodder for animals and supply of milk. The Corps owns only a limited number of farms and cattle. The major portion of the requirement is procured through contrasts. In view of recommendations made above, the Corps could hand over the responsibility of supply of milk to RVC and take over the new role of maintaining agricultural farms to

include all vegetarian food articles required for the Services and requirment of fodder for animals. This Corps could generate all products on a regional basis using mainly ex-servicemen belonging to those areas thus also achieving the aim of resettling some of ex-servicemen after their colour service.

The distribution of these items could continue to be the responsibility of the reformed Army Logistics Corps.

PIONEERS

Essentially pioneers are required to fulfil the following roles :-

(a) Assist engineer units in semi-skilled and unskilled tasks.

(b) Provide manpower for unskilled tasks in store holding installations and loading and unloading of stores at rail heads and air fields.

(c) Any other legitimate tasks assigned to them by an officer of the rank of brigadier or equivalent.

Notwithstanding the above, the installations referred to in sub-para (b) above do employ large number of civilian labour for tasks specified above. Engineers also use civilian labour for the task specified in sub-para (a) above. The fact that a civilian equivalent of a pioneer would be cheaper and thus more economical would be obvious. Occasions and situations that demanded combatant staff during World War II do not exist at present.

Since the tasks are well defined and user-agencies are known, it is for consideration whether we could incorporate this category of personnel in the respective Corps. The same group and pay scales could be assigned to these personnel who would then belong to the combat engineers, Army Logistics Corps and be on their pay roll. Training of these personnel should pose no problem and could be accommodated from within the present resources of their centre and also oriented to their respective requirement. The present Records Offices should be able to handle the documents of these additional personnel. The Directorate of Pioneers, the Pioneer Corps Training Centre and the Corps appointments at various formation HQ could be surrendered. Besides this saving, the above proposal would also limit the use of this expensive manpower on extraneous duties which are strictly not pioneer tasks but get covered under sub-para (c) above. Miscellaneous requirements could be met by employment of civilian labour.

MISCELLANEOUS POINTS

Military Security

This aspect covers security of personnel and material and military intelligence. At present security of personnel and military intelligence are

the responsibilities of the Intelligence Corps. This Corps is integrated into the General Staff. Security of material is the rsponsibility of the Officers Commanding units. All aspects concerning this responsibility are dealt by formation HQ at various levels. In addition, separate staff in the form of Defence Security Corps personnel are provided to certain selected arms and services for physical security of civilian personnel and material.

The primary task of Military Police is to ensure personnel and traffic discipline in the Army. However, the task at present performed at the traffic barriers and check posts do cover some aspects of personnel and material security. These functions overlap to a certain degree with the function of the field security organisation which is again under the Intelligence Corps.

Any security system should be based on the prevailing and the foreseeable trend of breaches in security. Basically the trend would be the result of the character and discipline of people in the Organisations and those from outside who could collude with them. The security system should be so designed to cover the above and be a preventive machinery rather than detective and punitive. At present we cannot even assess the trend of losses due to theft and pilferage or total annual loss in the Defence installations as such statistics are not available centrally for study.

In view of the above, there is a need to streamline and coordinate all the security tasks and the organisations so that security functions are carried out in an effective and economic manner. Since the overall responsibility of Military Security rests with Directorate of Military Intelligence, it would be appropriate if all activities and functions which contribute to the overall military security is coordinated by them. Discipline and traffic control cuties of the Military Police which are 'A' matters could be coordinated at appropriate levels by the 'G' staff who would control all elements engaged in military security. Military Security should also cover vigilence aspects so that the organisation achieves preventive security.

Staff Concept

We follow the staff system inherited from the British Army. Essentially it is divided into three components—The General Staff consisting of operational, intelligence, staff duties, training and weapons and equipment, the 'A' staff comprising of all personnel matters and 'Q' staff dealing with logistics. The staff system was created as a 'service' to troops. In addition to this function they also assist the commanders to translate and disseminate orders and maintain progress of tasks assigned to lower formations. Probably originally the term 'general' has been assigned to envelope any unspecified content of staff work like coordination as is normally done by General Staff. However, it is now generally understood as the staff appointments reserved for potential senior commanders. Perhaps in the

course of history and the fight for recognition, power and prestige, a superior attitude and within itself a gradation of status had been assumed by the staff. The power position now stands—General staff. 'A' Staff and 'Q' Staff-in this order. This gradation of status and hence the craving for postings to the prestigious appointments in General Staff, has no bearing to the relative work content or importance of duties in the Army. The fact that technological advancement in weapon systems and psychological and educationl factors amongst human resources have had considerable impact on the work of 'A' and 'Q' Staff, has not been recognised although identified. It is, therefore, a matter for serious consideration whether we should continue with this caste-ridden staff system. In all fairness we should discard this system and adopt a common and equal status to all departments of staff. A system of numerical suffixes to 'S' such as S1, S2, S3 could be given for identification purposes.

Further the General Staff concept seems to have out-lived its effectiveness. Functionally, apart from operational, intelligence, staff duties and military training matters, they perforce lean on the departmental heads in regard to matters pertaining to weapons, equipment, technical training and organisational matters. It is bound to be so in view of the specialist nature of work assumed by the arms due to technological advancement. It is also not fair to expect a General Staff Officer to deal with current problems of the arms without their advice. Since the heads of arms form part of most of the formation HQ, these responsibilities could well be assigned to them. At present they have the responsibility to advise but no authority to implement and coordinate the policies. This anamolous position should be rectified.

At Army HQ, the General Staff has been bifurcated. The military operations, intelligence and training have been grouped under the VCOAS and the rest of the General Staff viz. staff duties and weapons and equipment have been given to the DCOAS. The above division of General Staff should be generating problems of coordination of work both between the various components of General Staff as well as the arms and services which have to function in close conjunction with them. A unified General Staff would be more effective. If the bifurcation has been done based on the requirement to substantiate two PSOs, we could consider enough load for a separate PSO who could be made responsible for the following :—

(a) Coordination of research and development and evolution of combat doctrines.
(b) Assessment of operational plans of formations whenever necessary and technical inspections.
(c) Management services such as Work Study, Operations Research, EDPS, Financial Planning, ASEC, Statistical Analysis.

In view of the above, there is a strong case for reverting to the old pattern of grouping all the components of General Staff except those mentioned

in sub paras (a) and (b) above and giving them to the Chief of the General Staff (CGS).

The introduction of COS at command level does not seem to have achieved better efficiency or effectiveness. In fact there seems to be a requirement of a Maj Gen (Administration) at the Command level in view of the complexities of logistics and personnel problems in our Army. Further the impact of upgrading certain appointments of the heads of arms and services to Maj Gen have created problems of human relations and communications. In view of these reasons, we should have two Maj Gens at Command level, one dealing with General Staff matters and the other with Administration (MGA).

Logistics Coordination

In view of the proposed changes in the roles of various branches, there will be a requirement of coordinating agencies to look after the logistic support at various levels in the Army. In the proposed system the responsibility for demanding, holding and distribution of the items will be the responsibility of the various arms and services at various formation HQ. The administration of the store holding units would, therefore, need separate logistic formation HQ at various levels. These HQ could be grouped under a separate Logistic Command HQ suitably located to function directly under the Army HQ. This HQ should have the representatives of all branches who would coordinate all logistics functions for the Army. In this context, the present functions of Area and Sub Area HQ would need rationalisation and re-organisation.

Gradation of Arms and Services

Without valid reasons we have created degrees of importance to various arms and services. Classifying the components into teeth arm, arm and service does not contribute to establishing camaraderie and espirit-de-corps in the Army at large. The importance of a Corps or an individual is related to one's qualification, placement and situation. The courage and valour required of a driver of a recovery vehicle in mine breaching operations will perhaps outweigh that of a missile operator in the same environment. Classifying various components of the Army in a misconceived degree of importance based on risk element alone affects human dignity. It would, therefore, be in the best interest of the Army to discard the use of the terms—teeth arm, arm and service. It is enough if we designate them as various Corps. Such a step will enhance the pride of individuals and organisations and unity of purpose all round.

Leadership

Leadership and military management could be termed synonymous.

To recapitulate leadership we should, therefore, examine various definitions of management as well as leadership. Some of the definitions are given below :—

Management

(i) "Is the act or art of getting things done through the people"—accepted definition.

(ii) "Accomplishing events through people"—Joseph G. Mason.

Leadership

(i) "Leadership is complicated. It is intellectual; it is emotional and it is learned. It is the summation of the total man which must square with myraid desires of the group."—Professor Emery Stoops, University of California.

(ii) "Followed the path which he had chosen, enjoying every step, quick to shock, slow to offend, but carrying nothing how his words and actions were interpreted when he felt their aim was right, leading without looking back because he knew that we would follow him".—Gina Watking.

No one will dispute this indispensable motivating force in war. Various ingredients of leadership are known factors and, therefore, are not discussed. A deliberate programme is necessary to nurture and develop this quality at all levels. A depth study is suggested to develope the programme.

PERFORMANCE APPRAISALS

No country could boast of a system which claims 100 per cent accuracy or fairness in performance appraisal. A certain degree of distortion and personal bias would always be present when an individual reports on others performance. It would be worthwhile to examine the causes for such distortions and bias and take action to minimise their effect on reports.

Basically the quality and truthfulness of reports on subordinates would depend on the character and discipline of the Initiating Officer. If this is guaranteed, then there should be no reason to doubt the fairness and accuracy of reporting. If we cannot guarantee this state at least in 80-90% of cases, then we cannot rely on the reporting system. We should take measures to compensate and bring justice and fairness to the officer being reported upon. On this foundation depends the quality of leadership at higher levels.

The present system in the Army is often commented with mixed feelings. ACRs are initiated by one person who is the appointed superior. With the prevailing standards of character and discipline in individuals, the standard of rating and assessment varies with individuals to a considerable degree. The following assessment on performance appraisal by Mr

Lawrance Appley would sum up the facts prevailing in performance appraisal systems :—

> "Agreement, silence and conformity are the bi-products of the fear of being judged. Subordinates communicate upward what the bosses wish to hear, not to protect his blood pressure but to escape his unfavourable opinion. It is assumed that promotions are based on being liked rather than on merit. If this is untrue the contrary must be made obvious because the former is believed without good evidence."

Until such time we are reasonably assured of acceptable minimum standard of character and discipline amongst us to rely on one man's assessment, we could try the three tier system of reporting. This system takes into account the impressions of the colleagues and subordinates of an officer in addition to his superior. At the outset the system appears complicated and impracticable from coordination and compilation. But with the introduction of computers in the Army and the future proposal to increase the computer application, this idea is worthwhile trying at least on an experimental basis in a selected Command. The qualities to be reported upon could be simple and minimal. We could even reduce it to two tiers—superior and the subordinates during the trial period.

Selection of Officers for Higher Command

The selection of officers for higher command has been a controversial issue in our system. While the General Cadre Officers who are mainly drawn from the Infantry contend that the knowledge and expertise gained by them at various levels of command are pre-requisites for higher command, others are of the view that the comprehension and decision making required at directional and conceptual level do not demand detailed knowledge or personal experience at activity and functional levels. Many officers from non-infantry cadre are apprehensive about the system. Some of the officers from arms who had been taken into the general cadre could not go beyond a Brigadier when their colleagues in their own arm have been promoted to higher rank in their own Corps. The officers from the technical and non-technical branches (services) are generally not in the run at all for selection to the general cadre. There seems no justification for this treatment particularly when selection of officers to various arms and services are done at a comparatively young and formative age and no deliberate and accurate watch is maintained on the development of the officer to qualify himself for general cadre later in the career. It is not also fair to debar the arms officers who are selected for general cadre from promotions in their own arm when they fail to make the grade for further promotion in geneeal cadre.

The present system restricts the selection for higher command to a small group. No one can dispute that the cream of the Army should go

into the general cadre. Since it would not be possible or desirable to select and induct officers into this cadre at the earlier stage of the career, it would be appropriate that the induction to this cadre is made on a selective basis from all arms and services in a progressive manner. Even the selection to the Defence Services Staff College (DSSC) could be based on potential for higher echelons of command. The present quota system should need change and additional requirements for probing leadership potential be incorporated in the selection procedure. Once selected for DSSC these officers could form the base for General Cadre for higher command. Besides this selection, at the stage of Lt Col/Col/ Brigadier, a process could be evolved and a competitive selection introduced for selection to NDC Course and then induction to the General Cadre. This would be in the overall interest of the Army. Such a process would ensure selective leadership. Future promotion of officers from non-infantry cadre should also be safeguarded from stigmas attached to their original arm/service.

Further it is for consideration whether administrative staff experience at least at sufficiently senior level should be made mandatory before selection to more senior appointments. In fact a balanced experience in more than one graded staff appointment would give prospective commanders better comprehension of their future assignments. Such a system will defuse the present craving for certain specific General Staff appointments.

SL Cadre Officers

During World War II and immediately thereafter, we had a few cadre of special list officers. Primarily these category of officers were employed in assignments which required considerable practical knowledge and expertise. Such requirements existed in various arms and services such as Cipher Officers and Technical Maintenance Officers in Signals, Armament Inspectors in the EME and so on. Such appointments also created avenues for JCOs to be promoted officers who were otherwise ineligible to be rewarded in any other manner. However, during the course of two decades, the special list cadres had infiltrated in general cadres also viz the Quarter Master cadre and Record Officers. Quarter-Master cadre had taken away the only training ground for young officers on administrative duties. Record Officers have organised themselves into a separate cadre under the Inspector of Records thus denying opportunities to regimental officers to gain experience in the important area of personnel administration. Terms and conditions of service of SL Officers are also different giving added advantage to this category.

A re-appraisal of the entire concept and requirement of various special list officers cadres is required to be carried out in the following light :—

(a) Enough incentives and opportunities for OR exist today for advancements. The proportion of OR entry to NDA and IMA are considerably high. Avenues of honorary ranks have given considerable monetary gains to JCOs.

(b) Quarter-Master duties and Record Officers functions are essentially regimental in spirit and substance. These duties could be performed by any regimental officer having the aptitude and training. Such duties would stand to give a broader vision and depth of knowledge in administrative duties which are essential for departmental and general cadre higher appointments.

(c) With arms and services getting more and more technology oriented, the contribution of the special list officers in technical arms and services are negligible.

(d) Majority of the officers opting for SL cadre do so due to favourable conditions of service in regard to age of retirement and sedantry nature of work. This tendency is not conducive to overall discipline and morale or efficiency in the Army.

RECRUITMENT OF OFFICERS FOR TECHNICAL BRANCHES

At present the technical branches like Engineers, Signals and EME have large establishment to train officers on Degree Engineering Courses of over three years duration. The feasibility of enhancing the intake of engineering graduates into these branches should be examined in depth so that these military training establishments could be pruned to orientate these graduate trainees to military tasks. Beside curtailing the establishments to a large extent, the duration of the courses could be shortened thus effecting enormous saving.

If, however, officers show special aptitude for engineering branches amongst those passing out of the NDA, they could be sent to various technical institutions after their fourth term at the NDA to continue their training and obtain engineering degrees. A working arrangement would be possible to send these personnel to skip certain number of semesters and thus qualify the degree course earlier. Compensatory seniority could also be given to such officers in relation to their course-mates who would have been commissioned earlier.

TRAINING CENTRES

There appears to be no co-relation between the number of training centres and the total strength of various arms and services. While the Artillery have two training centres, the engineers have three centres, one for each group. The Signals and ASC have two centres each. The EME have three centres on a regional-cum-trade basis. In addition, each arm and service have a separate establishment for training officers and running specialist courses for JCOs/OR in the form of colleges and schools. It is my view that not more than one centre is necessary for each arm and

service. It should also be possible to combine the colleges or schools with the respective centres. A unified but enlarged command structure with adequate staff and accommodation would be capable of looking after training of all ranks at one place. Difficulties and problems in the form of specialisation now assigned to various training centres, cost involved in the shifting of technical installations and other similar reasons could be overcome and suitable alternatives worked out, once the policy of centralised training for each arm and service is accepted in principle. Even from the point of view of cost analysis, such centralisation would prove beneficial in the long term perspective.

ARMY BASE WORKSHOPS

This concept has its origin to the overseas commitments of the Allied Forces during World War II. It had also relevance in view of the large quantum of equipment of foreign origin with no civilian source for spares or overhaul facilities. But the situation has changed considerably. With the progressive induction of indigenous equipment and the improved workshop facilities available within the country we should challenge the necessity of those workshops particularly in respect of equipment of indigenous origin. The role and functions of these workshops could be taken over by the Public and Private Sector undertakings who are responsible for supplying these items. If need be, our present assets could be taken over by them and a rate contract system established for deposit repair and overhauling of equipment and vehicles. The public sector undertakings should establish special facilities for overhauling requirements to meet our operational and administrative environments. Besides saving considerable combatant manpower, we would achieve financial savings as well. Detailed study would be necessary to shape this concept into practical reality. This should be done in conjunction with the concerned civil undertakings.

RESEARCH AND DEVELOPMENT (R & D)

At present an elaborate organisation exists for R & D under the Ministry of Defence. In addition, we have Scientific Advisors and some staff for the COAS and each of the Army Commanders. They are highly qualified scientists who are engaged purely on advisory jobs. No one can dispute that R&D is a vital organisation for any industry. Considering the industrial requirements of the Armed Forces, considerable investments are necessary for R&D requirements. But the economic considerations and talents dictate that we utilise the existing resources of the country to the best advantage. When the R&D Organisation started in the Ministry of Defence, this potential and facilities with the educational and industrial institutions were negligible. Further, these organisations could not invest large finances purely for R&D work of Armed Forces. But during the course of two decades, the R&D work at these institutions have made

commendable progress both qualitatively and quantitatively. Organisations such as Indian Institutes of Technology, Space Research Centre, Tata Institute of Fundamental Research, Electronic Commissions Laboratories, Bharat Electronics Ltd., Indian Telephone Industries, Indian Institute of Science, Bangalore and other institutions possess great potential for R&D work now and do undertake projects for the Armed Forces. It is, therefore, for consideration whether we could integrate our requirements with these National Organisations and where necessary have adequate service representation for advice and interpretation of peculiarities of environments of usage of technology and equipment. We have such arrangements now with some of the above mentioned institutions. Enhancing this concept we could without any ill-effects reduce the present R&D Organisations in Ministry of Defence and restrict their activities to coordination and staff work only. However, where matters of highly classified nature are handled and/or the projects which are of exclusive concern to services may be handled by our R and D establishments.

In continuation of the above proposal, it is suggested that the arms and services should be made totally responsible for generating concepts and assigning R&D work to the above institutions after the approval of the staff. Inter-Service Coordination could, however, be done at the level of a sub-committee of the Chiefs of Staff or by a reduced R&D staff at Ministry of Defence.

CONCLUSION

In the past we have been obsessed with a false sense of economy. Administration functioning with this one aim in view have forced organisations to exaggerate their demands anticipating the usual cut imposed during the hearing by Army Standing Establishment Committee and the Ministry of Finance (Defence). This tendency still persists. In effect the financial stringency had been so much over-played that officers at various levels had stopped generating new thoughts or concepts with pre-conceived results of rejection. Neither are they encouraged to do so for the same reason. It had thus created a vacuum in new thinking amongst one generation. Only the persevering branches managed to salvage the minimum they could get out of the ASEC and the Government.

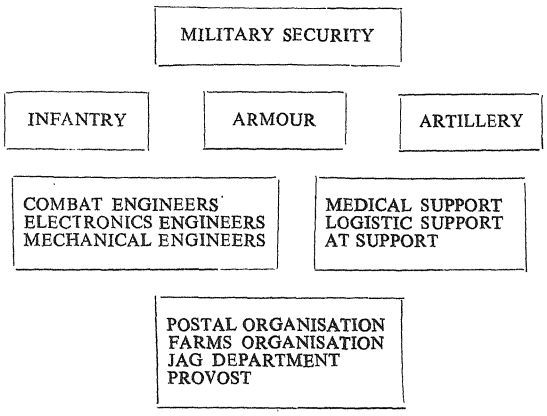
An organisation requires several inputs to achieve the desired goals. Primarily these are machine, materials, money, methods and man-power. In the context of continuously changing technology, the effect of these inputs keep varying. It is, therefore, necessary that periodically an organisational analysis is carried out to assess the impact of the changed technological and psychological factors on the dynamic process of the inputs so that by timely adjustments, the organisation could be made to function with optimum efficiency. In fact a permanent cell is required to address itself to continuously examine these aspects and process changes.

Lastly to those who believe in adhering to proven concepts or being cautious of the unknown, I would like to quote—

"Irrationally held truths may be more harmful than reasoned errors"—T.H. Huxley.

The outline organisation which would emerge from the above discussion is shown below.

ARMY ORGANISATION IN OUTLINE



THE POLITICS OF INDIAN NAVAL RE-ARMAMENT, 1962-1974*

RAJU G C THOMAS

ONE simple reality of the May 1974 Indian nuclear test is that by this very transition India may have to rely more on her conventional forces should her traditional adversaries call her nuclear bluff. For the present, it would be safe to assume that pre-nuclear defence policies and programs would be continued. No doubt the atomic blast may have set in motion, however slightly, the wheels of balances and alignments in Asia, but certain basic issues persist, especially those concerning her relations with Pakistan and China. These questions arise within new frameworks as a result of changing international trends, and one of the pressing problems facing Indian strategists and defence planners today is whether there ought to be a radical shift in the present areas of defence spending as among the Army, the Air Force and the Navy.

Part of the problem results from the division of Pakistan and the proclamation of Bangla Desh in late December 1971 which left the Indian military forces overwhelmingly superior to the new states of the subcontinent. Part of the problem is caused by the confusion and uncertainty prevailing in four new areas of concern outside the subcontinent. First, the strategic repercussions on India stemming from the frantic arms race taking place west of the subcontinent have yet to be assessed. As to whether the threats from China and Pakistan have receded may still be a matter of dispute, but it is being increasingly recognized in New Delhi that events in the Persian Gulf and the Middle East could have an indirect bearing on the economic survival of India so long as she is dependent on oil imports for her agricultural and industrial development programs. Secondly, uncertainty prevails on the implications of the new super-power rivalry in the Indian Ocean. The major moves by the United States to counter the Soviet presence will be seen as action likely to upset India's dominance in the subcontinental region and vicinity. Thirdly, a China on the brink of another "cultural revolution" and all the unpredictabilities of Chinese intentions and policies in a post-Mao era have still to be brought into the overall Indian foreign policy equation. Fourthly, the motives underlying the Indonesian naval build-up remain unclear and whether the Indian naval program should take into account trends in Southeast Asia needs to be determined.

Whatever the justification for a change in the direction of Indian

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foreign policy from an obsession with Indo-Pakistan and Sino-Indian relations to a concern for politics in the Middle East and the Indian Ocean, it is clear that the new interests have a bearing on past concerns. What makes New Delhi apprehensive at the moment is that events in the Middle East and the Persian Gulf may affect the subcontinent through Pakistani involvement, and the ascendancy of American power over the Indian Ocean may upset the so-called "new realities of the subcontinent" by neutralizing India's present position of supremacy. No doubt the dreaded Sino-American collusion has turned out to be less ominous than first perceived but nevertheless a benevolent American policy towards China would enable the latter to maintain past pressures along the Himalayan frontiers.

From the new trends there are two indirect benefits that are likely to accrue to India's traditional enemies. First, there is the possibility that the glut of arms being acquired by the oil-rich states of the Persian Gulf and the Middle East will find its way into Pakistan. Already fears have been expressed over press reports that France is to manufacture Mirages in Pakistan for supply to her Arab customers.[1] An arrangement whereby the Arabs will provide the hard currency, France the technical know-how and materials, and Pakistan cheap labour, manufacturing facilities and facilities for training Arab pilots, cannot be viewed in India as anything but sinister. Further Pakistan's continuing ties with a militarily resurgent Iran through the lingering R.C.D. pact will provide her with one more major source of arms acquisition. Second, the insistent Chinese assertion of her claims to the Paracel Islands against South Viet Nam, an ally of the United States, will be seen as an indication that even American disapproval of similar attempts along the Himalayan borders may not be forthcoming.[2] There are two factors that would check a potentially militaristic China from pursuing a hostile policy towards India: continuing Soviet military pressure along the Sino-Soviet borders, and a dominant Soviet naval presence in the Indian Ocean that would preclude American gunboat diplomacy during a South Asian imbroglio. A dominant American naval presence in the Indian Ocean, on the other hand, or even the neutralization of the Soviet Navy between the Suez Canal and the Straits of Malacca would make difficult Soviet military assistance to India in a future Sino-Indian war.

II

The rapidly changing external situation east, west and south of the Indian peninsula will therefore be seen by some Indian foreign policy analysts as calling for a radical shift in the present areas of defence spending. It will certainly boost the hopes and demands of the naval lobby in India which until the 1971 Indo-Pakistan war had been relatively neglected. Yet translating these new international perceptions into a new defence

policy may raise issues and complications that would be hard to solve. There are four problems that need to be dealt with :-

First, the new perceptions are conjectural. There is no precedent in Indian foreign policy for dealing with situations arising in the Persian Gulf, super-power rivalry in the Indian Ocean, the naval build-up in Indonesia, and Chinese strong-arm tactics in the South China Sea. The Shah's vision of Iran as a world power and the need to protect Iranian oil interests in the Persian Gulf area have prompted a large-scale naval program in that state. The build-up of the Indonesian Navy was inaugurated by President Sukarno in the late fifties and early sixties. By the time he fell out of power in 1966, Indonesia had acquired a sizeable submarine and destroyer fleet considerably larger than that possessed by the Indian Navy.[3] The expansion of the Chinese Navy has been steady and progressive. China presently constitutes the largest naval power in Asia although the deployment of their naval forces has been strictly confined to the safe proximity of the eastern shores of China. The large-scale movement of Soviet naval forces into the Indian Ocean is now being met by a similar movement by the U.S. Navy. All of these activities appear to necessitate a major Indian naval program, the costs of which may be prohibitive in the present Indian economic crisis phase.

Second, the new perceptions may encourage the pro-Navy forces to exaggerate and distort the threats arising from these sources. In one sense an excessive amount of spending on an offensive shipbuilding program may indeed set off a further naval arms race among the two other littoral states with the greatest naval potential, Iran and Indonesia, as well as with the hinterland state of China. Where the need for a strong Indian Navy was merely at one time tentative and conjectural, actual naval expenditures will in fact have established or aggravated the threat and thereby have justified the change in the direction of Indian defence expenditures.

Third, in contrast to the infantry-oriented nature of the Army defence program which presently consumes the bulk of the Indian defence budget, naval defence programs tend to be much more capital oriented. Even the modest Indian naval expansion program since the 1965 Indo-Pakistan war resulted in the dramatic increase of the Navy's share of the Capital Budget from 8 per cent in 1965-66 to almost 49 per cent in 1973-74 (See Table One). As against equipped soldiers with rifles and small arms ammunition, battalions with field guns, divisions with provisions and transport, and armoured corps with tanks and armoured vehicles, the Navy talks in the language of submarines, frigates, destroyers, patrol boats, minesweepers, and naval bases for docking facilities. The Navy is not labour-intensive as the Army is, and in a country with an overwhelming surplus of employable manpower, it may seem an economically unsound

TABLE ONE The Share of the Three Indian Services in the Annual Defence Budget

(Rs/Crs)	*62-63*	*63-64*	*64-65*	*65-66*	*66-67*	*67-68*	*68-69*	*69-70*	*70-71*	*71-72*	*72-73**	*73-74**
Rev Total												
(Actuals)	436.8	727.9	715.8	790.9	834.1	906.4	970.1	1013.5	1103.0	1390.1	1427.4	1447.4
Army % age	77.5	78.4	78.6	77.6	77.9	78.4	77.6	75.6	74.0	75.1	75.3	71.1
ArFc % age	17.8	18.5	18.0	18.6	17.9	17.3	18.2	19.8	20.7	19.9	19.6	22.9
Navy % age	4.7	3.1	3.3	3.8	4.2	4.3	4.2	4.6	5.2	5.0	5.1	6.0
Cap Total**												
(Actuals)	40.6	88.0	73.8	70.4	71.0	76.4	78.7	97.4	117.0	139.9	160.0	147.8
Army % age	45.7	53.4	58.1	53.9	55.4	56.4	52.0	52.9	51.1	50.0	45.2	38.5
ArFc % age	41.0	39.8	34.6	38.4	36.8	31.0	25.0	18.2	14.6	17.0	15.2	12.7
Navy % age	13.3	6.8	7.3	7.7	7.8	12.6	23.0	28.9	34.3	33.0	39.6	48.8
Rev, Cap, NonE/***												
(Actuals)	495.7	834.3	810.1	884.9	907.6	1008.8	1078.9	1145.5	1265.1	1580.8	1644.4	1655.6
Army % age	75.6	76.2	77.2	76.2	76.1	77.3	76.3	74.3	72.7	73.5	72.9	69.0
ArFc % age	19.1	20.3	19.1	19.7	19.4	17.9	18.2	19.1	19.5	19.2	18.6	21.3
Navy % age	5.3	3.5	3.7	4.1	4.5	4.8	5.5	6.6	7.8	7.3	8.5	9.7
% age Increase ***on Previous Yr***												
Army % Incr.	...	69.5	—1.6	7.8	5.7	9.4	5.5	3.5	8.0	26.5	3.1	—4.7
ArFc % Incr.	...	79.3	—8.8	12.6	1.1	2.8	8.7	11.2	12.7	22.7	—0.1	16.2
Navy % Incr.	...	10.0	3.2	22.2	12.3	19.7	21.4	27.0	31.5	16.7	18.6	17.7

* The figures for 1972-73 are not Actuals but Revised Estimates ; those for 1973-74 are from Budget Estimates. Actuals were not available at the time this data was collected.

** Note that Capital Total expenses on Manufacturing and Research Establishments that were directly assigned to one of the three Services. It also excludes "Outlay on Industrial and Other Organisations" which are the 8 public sector undertakings under the Defence Ministry.

*** Non-Effective charges refer to pensions, awards, etc.

Source : Figures collated from the annual ***Defence Services Estimates,*** 1962-63 to 1973-74, Ministry of Defence, Government of India, New Delhi.

policy to think in terms of a naval build-up as against equipping a massive land-based Army.

Fourth, it is difficult to see how such a radical shift in Indian defence strategy can be brought about without a serious confrontation with the entrenched Army bureaucracy. Since the 1962 Sino-Indian war, successive Naval Chiefs of Staff from Vice-Admiral B.S. Soman to Admiral S.M Nanda have sought to gain the attention of Indian political leaders with varying degrees of success but little overall policy change. The defence apparatus in India is still predominantly the Army. Even the Indian Air Force is essentially a supporting wing of the Army geared to provide tactical air cover for the Indian land forces.[4] They play little strategic roles of their own despite early efforts to distinguish themselves from Army strategy. Moreover, the Army carries a proud historical tradition, a distinguished record in two World Wars and four tests of strength in post-independence campaigns. As against this, the Navy only raised its head in the last 1971 Indo-Pakistan war. Above all, the Army will surely point out that the real threat still stems from complications that are likely to involve India's traditional foes, Pakistan and China. With extensive land frontiers and little sea contact, any major campaign would still be essentially a land war where the Navy may be called upon to play only a minor part.

Some of these problems are rooted in the outlook and history of the three Indian Services and the disparate roles that each played during the British *raj*, but of greater relevance to the present debate are the events that unfolded in India since the war with China was fought in October 1962.

III

Since the Indian military build-up began following the Sino-India war of 1962, the naval program has gone through three phases coinciding with the wars with China and Pakistan :- (1) The inter-war years between 1962 and 1965 when the Navy lay largely neglected except for occasional assurances from the Defence Ministry that its claims would be shortly considered. (2) The inter-war years between 1965 and 1971 when the pro-Navy forces became more assertive and vociferous. Modest beginnings were then made to re-arm the Navy, and efforts were directed towards modernizing the naval shipyards under the Defence Ministry and to a program of naval shipbuilding through indigenous sources. (3) The years following the 1971 war with Pakistan when the Navy for the first time in its history had demonstrated that it could play an important role in the defence of India.

Among the initial concerns expressed on behalf of the Indian Navy after the Sino-Indian war was the need to equip it with submarines, though the precise role these vessels would play were never made quite clear. In

April 1963, Defence Minister Y. B. Chavan informed the Lok Sabha that the Indian Government had now accepted the necessity of a submarine fleet and Naval Headquarters had been asked to frame proposals.[5] In response to a question by a Praja Socialist Party member, Chavan vaguely explained that the Government of India was aware of the capacity of the Chinese Navy to operate its marines in the Bay of Bengal and the Indian Ocean. He did not indicate whether the Defence Ministry expected that such Chinese naval manoeuvres would be conducted so close to the shores of India.

What was apparent in these considerations was not that the Navy would play an important part in another Sino-Indian war, but that a prospective Anglo-American arms deal might as well include a few ships and submarines so long as the arms supplies were being made on easy terms. In early 1964 London and Washington were sounded for frigates and submarines. These requirements were justified on the grounds that beyond the growing Chinese Navy, both Pakistan and Indonesia had acquired submarines which someday could result in a Pindi-Peking-Jakarta naval threat to India.[6] The United States, however, was unwilling to consider such naval requests and suggested that Britain be approached for naval equipment as the entire Indian Navy had been obtained in the past from that country.

Talks between India and Great Britain tended to be largely exploratory when the British Admiral of the Fleet, Earl Mountbatten, visited New Delhi in January 1964 for consultations with Chavan and the three Service Chiefs, General J. N. Choudhuri, Air Marshal A. M. Engineer, and Vice-Admiral B. S. Soman.[7] Also present at the meeting were Defence Secretary P. V. R. Rao and Additional Secretary Harish Sarin (in charge of the Navy's expansion program) and they pointed out that the Navy continued to be the weakest link in the defence apparatus which left the overall defence set-up badly imbalanced. It was decided at the talks, however, that submarines were not only too expensive but also not readily available in Britain and that it would be advisable at that stage to go in for a frigate program which could be manufactured in India with Western technical collaboration. Accordingly the Defence Ministry initially suggested a choice between a Swedish prototype and a British prototype which when selected would be put through a phased program of manufacture at Mazagon Docks in Bombay. Nevertheless, the Navy's development program was given low priority in view of the pressing need for fortifying the country's northern frontiers against fresh Chinese attacks. An exception was made, however, for developing the naval base in the Andaman Islands in the Bay of Bengal and this limited scheme was taken in hand.

The belief that submarines were essential for the Indian Navy persisted throughout 1964 and 1965 until the Indo-Pakistan war of 1965, but the

source of the naval threat to India continued to be vague. In November 1964 Chavan informed the lok Sabha that the Union Government was examining the possibility of buying one submarine each from the United Kingdom and the Soviet Union.[8] The Government of India was "fully aware of Chinese naval capacity", Chavan informed Members of Parliament, but admitted that the Defence Ministry had not received any specific report of Chinese naval activities in the Bay of Bengal or of any threat to the Andaman Islands. But because the Defense Ministry and the country had been caught unawares in a significant land war with China, the possibility of "future air and sea battles could not be ruled out." Four months later in April 1965 Chavan declared in Parliament that if the present negotiations with Britain for acquiring a modern submarine did not succeed, "we will have to think of some other alternative", indicating the Soviet Union as the other nation which had offered to help.[9] The main obstacle in going Soviet was one of standardization and maintenance in a Navy which was overwhelmingly British in origin, and the hesitation still continued.

The necessity of submarines was never clearly enunciated but the fact that Pakistan had acquired one from the United States, Indonesia had acquired 6 from the Soviet Union, and the fact that China possessed 30, were important considerations and in the post-1965 Indo-Pakistan war phase these concerns were strongly voiced. If the argument "submarines for what ?" could be advanced against India, it would be equally pertinent to ask Pakistan, Indonesia and China what their motives were in acquiring such vessels. Most of the Indian Navy was obsolete while the small Pakistan Navy had been modernized at American cost under the Mutual Defence Assistance program and was capable of harassing the Indian merchant and naval fleet from Karachi on the Arabian Sea to Chittagong in the Bay of Bengal. Despite all these arguments, actual defence policy continued to reflect the traditional Army thesis that the real threat to India came from the extensive land frontiers with China and Pakistan. If a naval threat to India from China did exist, then this would almost certainly be met by the American and British navies.

By now the naval lobby had sharpened its general demands for a stronger Indian Navy. If India has extensive land frontiers, its coast line was equally extensive, and while most of the famous historical invasions came by land, the most crucial one—the British invasion—came by sea, a point which tends to be overlooked in the strongly British-minded Indian Services[10]. As regards in Indian naval tradition, these voices pointed out that India carried a proud maritime tradition during the Vijaya kingdoms that lasted between the fifth and tenth centuries that could rival the more recent alien Army tradition. Moreover, strong navies during this time did not result in Indian aggression

abroad but facilitated and ensured the peaceful exchange of trade and culture with the countries of South-east Asia.

This neglect of the Navy was repeated and emphasized by several of India's prominent newspapers throughout 1966, but lacking a concrete instance in the post-independence era where the Navy had played an effective part in the defence of India, the arguments of the Naval lobby did not appear credible.[11] Nevertheless, some movement towards naval shipbuilding had commenced. While the annual Defence Services Estimates for 1966-67 presented to the Lok Sabha showed no significant rise in the allocations to the Indian Navy (indeed, it dropped slightly from Rs. 6.5 crores to Rs. 6.4 crores), the Government of India had begun sizeable investments in the shipbuilding public sector undertakings (See Table Three). The investment in new construction at Mazagon Docks, Limited and Garden Reach Workshops had been increased from Rs. 110·1 lakhs and Rs. 73·8 lakhs to Rs. 157·8 lakhs and Rs. 148·9 lakhs respectively. Within two years these investments were to rise to Rs. 638·5 lakhs and Rs. 256·2 lakhs, and by the beginning of the Bangla Desh crisis in 1971, the investment in Mazagon Docks, Limited had more than doubled again to reach Rs. 1,468·0 lakhs.

The increase in naval spending was primarily directed to a frigate program at Mazagon Docks in Bombay. On October 15, 1966, the keel of the first Indian naval warship was formally laid at Mazagon Docks. The 2,400-ton frigate was of the Leander Class and was to be built in collaboration with Vickers and Yarrow of Britain.[12] This was to be the first of three such vessels which would be built in Bombay over the next three years, and, meanwhile, the Government of India continued its search for submarines in the overseas market.

The absence of naval participation in the wars of independent India until 1971 suggested that arguments for more allocations to the Navy had to be re-phrased in more convincing fashion. By early 1967 this took the form of two refinements of the arguments presented thus far :—(1) It was not naval power alone that needs to be strengthened but the entire maritime capability of India which would substantially contribute to the prosperity of the country and in which the Navy of necessity must play a guardian role. (2) Unlike the Army which could be quickly fortified after the unexpected Sino-Indian conflict, the Navy cannot be armed overnight. Just as there was no precedence to the Himalayan conflict, future wars that called for naval participation would have no precedence but with the disadvantage that ships and crews cannot be raised like mountain divisions. It would, therefore, be prudent to plan ahead, however remote the contingency.

In December 1966 the first of the above contentions was enunciated by the Chief of Naval Staff designate, Vice-Admiral A. K. Chatterji ;

TABLE TWO Production in Public Sector Undertakings under the Ministry of Defence: The Naval Share

(Rs/Crs)	*63-64*	*64-65*	*65-66*	*66-67*	*67-68*	*68-69*	*69-70*	*70-71*	*71-72*
HAL	15.2	13.4	17.7	32.9	46.4	53.9	77.2	74.0	69.6
BEL	6.2	7.1	9.3	11.9	15.8	20.7	24.1	29.4	32.8
PTL	1.0	1.5	1.5	1.3	1.6	1.7	1.9	2.6	2.4
BEML	...	5.7	5.2	5.2	12.2	16.7	20.0	22.6	28.5
BDL	...	...	...	...	...	...	...	1.1	...
Shipyards									
MDL	4.5	4.1	3.9	5.0	6.7	10.7	13.7	16.4	21.1
GRW	2.8	2.7	3.6	4.8	6.3	6.8	8.6	15.0	17.0
GSL	...	...	MDL*	MDL*	0.5	0.7	0.7	1.0	1.2
TOTAL (all)	29.8	34.5	41.3	61.1	89.6	111.3	146.2	161.0	173.7
Ttl/Shpyds	7.4	6.8	7.6	9.8	13.5	18.2	23.1	32.3	39.3
°/o age Shpyds to TOTAL	24.7	19.7	18.3	16.1	15.1	16.4	15.8	20.1	22.6

Key :—HAL=Hindustan Aeronautics Limited ; BEL=Bharat Electronics Limited ; PTL=Prage Tools Limited ; BEML=Bharat Earth-movers Limited ; BDL=Bharat Dynamics Limited ; MDL=Mazagon Docks Limited ; GRW=Garden Reach Workshops Limited ; GSL=Goa Shipyards Limited.

* In 1965-66 and 1966-67 Goa Shipyards was managed by Mazagon Docks Limited and the MDL figures for those two years include work done at GSL.

Source :—Figures collated from the annual *REPORT*(s), 1963-64 to 1972-73, Ministry of Defence, Government of India, New Delhi.

TABLE THREE Shipyard Activity under the Ministry of Defence

(Rs/Lakhs)	*63-64*	*64-65*	*65-66*	*66-67*	*67-68*	*68-69*	*69-70*	*70-71*	*71-72*
M. New Constrtn.	75.0	102.5	110.1	157.8	281.0	638.5	902.2	1116.8	1468.0
D. Ship Repairs	313.0	246.0	250.9	311.2	358.9	323.3	388.3	452.9	561.2
L. Gen Engnrng.	17.0	38.0	29.9	32.3	52.9	109.4	82.9	66.4	77.7
TOTAL	405.0	386.5	390.8	501.3	692.9	1071.2	1373.5	1636.1	2106.9
G. New Constrtn.	78.4	91.5	73.8	148.9	250.2	201.4	388.4	560.7	597.1
R. Ship Repairs	145.2	115.6	179.4	176.2	211.4	229.5	130.3	205.0	250.7
W. Gen Engnrng.	...	61.8	112.1	156.6	167.0	244.6	344.3	732.0	853.3
TOTAL	223.6	268.9	365.3	481.7	628.6	675.5	863.0	1497.7	1701.1
G. New Constrtn.	...	2.1	5.4	11.8	13.5	34.8	36.8	56.6	78.5
S. Ship Repairs	13.6	18.1	24.3	26.6	32.7	35.8	37.8	39.5	35.6
L. Gen Engnrng.	3.0	5.5	2.3	2.1	1.5	2.2	2.5	2.8	4.3
TOTAL	16.6	25.7	32.0	40.5	47.7	72.8	77.1	98.9	118.4
GRAND TOTAL	645.2	681.0	788.2	1023.5	1369.1	1819.5	2313.4	3232.7	3926.4
Ttl. New Constrtn.	153.4	196.1	189.3	318.5	544.7	874.7	1327.4	1734.1	2143.6
% age Nw Cn/Gr Ttl	23.8	28.8	24.0	31.1	39.8	48.1	57.4	53.6	54.6

Source : Figures collated from the annual ***REPORT*** (s), 1963-64 to 1972-73, Ministry of Defence, Government of India, New Delhi.

"Concept of sea-power is not that of naval ships or naval aircraft operating by themselves ; sea-power is a combination of many factors but above all it means a flourishing mercantile fleet, a sea-faring community, a commerce-minded people and a Navy capable of defending our shipping at sea."[13] The second belief began to be reflected in the Navy's expectations of future defence expenditures. In a pre-budget statement in March 1967, Vice Admiral Chatterji declared that the Navy would get more in the Defence allocation, submarines would soon be obtained from the Soviet Union, the first Leander frigate was nearing completion, and that a new naval base would be established in the Bay of Bengal.[14] The naval chief also remarked that proposals were afoot to obtain new fighter planes for the aircraft carrier *I.N.S. Vikrant* to replace the aging *Seahawks*, and that the Hindustan Aircraft factory at Bangalore had begun to supply the Navy with *Alouette* helicopters for use in air-sea rescue operations.

The actual allocations for 1967-68 were disappointing although the Navy did receive Rupees 3.5 crores of the additional Rupees 8.9 crores under capital account for the purchase of frigates from Mazagon Docks[15]. In the overall Revenue and Capital allocations the Navy continued to receive just 5 per cent of the total defence budget, while the Army and the Air Force maintained their proportions around 7.7 per cent and 18 per cent respectively (See Table One). There was nonetheless an appreciable rise in the Navy's share on Capital Account from 7.9 per cent to 12.6 per cent, and this was to prove to be the start of a steady increase in the naval capital budget until in 1973 it received the major proportion of the defence capital allocation budgeted for that year. (Note, however, that Capital Account in the annual defence budget only constitutes about 10 per cent of the Revenue Account.)

The rise in the allocation of grants to the Indian Navy under Capital Account in 1967-68 was simultaneously accompanied by major increases in investment in the marine divisions of public sector undertakings. The anticipated purchase of naval vessels for 1967-68 had risen to Rs. 5 crores from a mere Rs. 1.6 crores in the previous year, and as a preview of future naval share in the Capital Budget, the Defence Ministry also announced a further Rs. 2 crores investment in Mazagon Docks (Bombay) and Rs. 1 crore in Garden Reach Workshops (Calcutta).[16]

By mid-1967 the naval cause found strong support in Parliament. especially among the right-wing Jan Sangh and Swatantra party members. In June 1967 Mr. N. Dandekar (Swatantra) pleaded for two independent fleets, one in the Arabian Sea and the other in the Bay of Bengal.[17] This had been a priority claim in the Navy's expansion proposals. According to the Swatantra member, while the Navy was geared to the

Pakistani threat on the west coast, the Chinese threat would come through the Bay of Bengal. It was also important, he said, to take into account the fact that Indonesia had not always been friendly and could possibly harass Indian merchant shipping in another Indo-Pakistan war. His concept of a second fleet was that it should be built around one or two aircraft carriers each with its own complement of accompanying ships, and the establishment of a major naval base on the eastern shores.

If 1968 was the year of the Navy, it was also a year of exaggerated claims and pretensions. On March 1 the Chief of Naval Staff was elevated to the rank of full Admiral bringing him on par with the Chiefs of Army and Air Force Staffs, despite the much smaller command under him.[18] On July 6 India entered the submarine era when the Soviet-built "F" Class large attack-type submarine the *I.N.S. Kalveri*, with its 70-man Indian crew sailed into the naval base of Vishakhapatnam.[19] On October 23 Prime Minister Mrs. Indira Gandhi launched the first Indian-built frigate, the *I.N.S. Nilgiri*, at Mazagon Docks in Bombay[20]. In December it was announced that the Navel Base at Goa would be expanded into a major base equal in importance to the one in Cochin;[21] and that a second Soviet submarine, the *I.N.S. Kanderi* was being comissioned at the Russian naval base of Riga in the Baltic Sea.[22] In 1968 two commands were set in operation, a Western Fleet with headquarters in Bombay, and an Eastern Fleet with headquarters in Vishakhapatnam.[23] And on Navy Day in December of that year President Zakir Hussain and Prime Minister Indira Gandhi, before a distinguished gathering of Cabinet Ministers, Defence Ministry officials and high-ranking naval officers, declared that "the Navy had come of age".[24]

These were creditable accomplishments but there was no doubt that the rhetoric far exceeded capabilities. Early in March 1968 the Chief of Naval Staff, Admiral Chatterji, made the fantastic claim that the Indian Navy would be in complete charge of the Indian Ocean with the withdrawal of the British fleet east of Suez in 1971.[25] Speaking at a ceremonial parade, he stated that Admiral Sergei Gorshkov of the Soviet Union had visited Indian naval establishments in February and negotiations were under way to acquire several naval vessels and equipment. The Navy was further drawing up plans to recruit more men to man these new acquisitions. Undoubtedly also much of these tall claims were for purposes of future bargaining in defence budget allocations and to build morale within the Navy. In one sense they were merely hopes for modernizing a still largely Obsolete Navy. The main vessel, the aircraft carrier *I. N. S. Vikrant*, perhaps had another ten years of useful life, but replacements for its strike force, the *Seahawks*, were overdue. Available alternatives in the international market were too large except for the Douglas *Skyhawks*

which Washington was unwilling to sell. On the other hand, the landing speed of the Indian-made *Gnats* was too high and its endurance too short. Only the British Hawker-Siddeley *Harriers* appeared politically accessible and economically and technically viable, and failure to obtain this would probably have meant scrapping the aircraft carrier itself.[26]

Two new destroyers, the *I. N. S. Kamorta* and *I. N. S. Kadmath*, were added to the fleet in 1969 and the Government of India heralded them as the forerunners of a new class of destroyers that would modernize the Indian Navy.[27] The existing six destroyers had been obtained before independence and had been built in Britain during the Second World War. These vessels—three of the "R" Class and three of the Hunt Escort type—had long since become obsolete in the Royal Navy but had been maintained in India at considerable cost. The "destroyer" acquisitions would supplement eight comparatively modern anti-aircraft and anti-submarine frigates built between 1958 and 1960 which carried a useful life of 20 years, and additionally a new helicopter squadron was also constituted.[28]

While these were modest capital acquisitions, a naval study group consisting of top naval officers put out a paper defining the strategic objectives and requirements of the Indian Navy for the next two decades.[29] Nobody can safely project international conditions over two decades, but these perceptions by high-ranking naval officers were considered by Indian observers as absurd and the demands for capital equipment as grossly exaggerated. Major-General D. K. Palit referred to the "notorious report" and the "neo-colonialist views" of the Naval Study Group, and wrote :—

> "Unlike the other services, the 'Imperial tradition' in the Navy overlapped by a good many years into the era beyond 1947, so that the Royal Navy mentorship of the Indian Navy continued as the guiding influence until very recently. The result has been that the Navy's attitudes and approaches to maritime strategy are sometimes conditioned by the grandiose, world-power outlook of the British Navy rather than by the more realistic (even if less ambitious) aspiration of an economically backward, newly independent, status quo nation like India whose strategic requirements are limited to the defence of its own territories."
>
> "India's own maritime heritage—whether in the heyday of our 'cultural empire' in South East Asia or during the height of Chola power and the Zamorin of Calicut's naval supermacy, or in the era of Admiral Angre's Maratha Navy—has never been one of domination of international oceanic highways ; Indian naval strategy has always been strictly coastal and shorebased. What is required today, is an objective analysis of the overall threat to India—not an isolated single-service appreciation of a puntative sea-borne threat or one heavily influenced by an exaggerated concept of our maritime responsibilities in the Indian Ocean.[30]

Though initially extreme in perceiving the Navy's future role, Admiral Chatterji was more modest in his later assessment of the Navy's role but continued to suggest that the Navy should go beyond the concept of simply defending the shores of India. In a seminar organized by the Press Council of India in 1969 in which the Service Chiefs were invited to participate, Chatterji declared that for certain "historical reasons...we are weak at sea." India did not have a balanced Navy, its growth had been uneven, and the naval allocation in the Defence budget was only of the order of Rs. 23 crores out of a total of Rs. 900 crores.[31] On the role of the Navy, he added:—

> "We all know it is necessary to have a strong army and a large air force to defend our territory. But these cannot exert influence on other countries. Today every independent country is conscious of its sovereignty and will not willingly allow foreign troops on its soil. But if some country—say East Africa—wants protection without foreign troops, the navy can carry out that role. An aircraft carrier or even a cruiser stationed 300 miles away from the territorial waters can afford some protection. In the old days this was known as the 'gun-boat policy' and troublesome elements were smothered by sending a ship about four miles from the coast where it could be seen. But when I speak of exerting influence, I do not mean it in the sense of wanting to conquer other countries. It is a matter of rendering friendly help, which in the long run will help the trade of our country.[32]

In March 1970 Admiral S. M. Nanda took over from Admiral A. K. Chatterji as Chief of Naval Staff. In the same month in the defence budget that was presented to Parliament, there was an increase of Rs. 47 crores from the previous year and the Navy again took the largest share of the increase mainly on Capital Account indicating further additions to the fleet as well as construction of shore facilities.[33] Of the naval capital allocation of Rs. 400 crores—compared to Rs. 28 crores in 1969-70—Rs. 23 crores was to go for the purchase of new vessels, Rs. 7·5 crores on the naval base at Vishakhapatnam, and Rs. 3.5 crores on the dockyards (Table Four). That year another frigate, the *I. N. S. Simgiri*, was launched at Mazagon Docks, and four more submarines were ordered from the Soviet Union raising the total acquired or on order to seven submarines.[34] There was thus a 31 per cent increase from the previous year in the overall naval allocation (Table One)—the largest percentage increase in any year since 1962—and subsequently under Admiral Nanda there was a lowering of the naval rhetoric. The Navy had begun to make its point in the inter-service debate but had yet to concretely counter the argument, "Ships and Submarines for what ?"

The opportunity came the following year. In March 1971 the East Bengal massacres took place and open revolt broke out in the populous eastern wing of Pakistan. War clouds loomed once again over the subcontinent. In the December Indo-Pakistan war, the Western Fleet in

TABLE FOUR Defence Capital Outlay of the Indian Navy

(Rs/Crs)

BUDGET *ESTIMATES**	*63-64*	*64-65*	*65-66*	*66-67*	*67-68*	*68-69*	*69-70*	*70-71*	*71-72*	*72-73*	*73-74*
Works	3.7	4.7	4.5	3.5	5.2	3.6	2.2	5.0	5.3	5.9	4.0
Acquisition of Land	1.4	0.3	0.2	0.3	0.4	0.3	0.8	0.3	0.7	0.5	0.1
Purchase of Naval Vessels	1.5	1.3	1.0	1.6	5.0	10.0	17.0	22.7	27.6	41.6	54.4
Naval Dockyard Expansion	0.8	1.3	0.8	1.0	0.4	**	2.5	3.5	4.5	3.5	4.0
Vishakhapatnam D'yard Project	—	—	—	—	—	4.6**	6.0	7.5	9.0	9.0	8.9
TOTAL—Budget Estimates	7.4	7.6	6.5	6.4	11.0	18.5	28.5	39.0	47.1	60.5	72.0
TOTAL—Actuals	6.0	5.4	5.4	5.6	9.6	18.2	28.1	40.2	44.9	63.4	N.A.

* The details are of Budget Estimates presented to Parliament annually. Actuals of minor heads were not available. However, the total of Actuals of the sub-head, Defence Capital Outlay, were available and are provided in the last row of this table.

** This includes naval dockyard expansion scheme as well. In subsequent years the Vishakhapatnam project was shown separately.

N.A. Not available at the time this data was collected.

Source : Figures collated from the annual ***Defence Services Estimates***, 1962-63 to 1973-74, Ministry of Defence, Government of India, New Delhi.

coordination with the Indian Air Force made a daring night raid on Karachi harbour setting ablaze shore installations and oil dumps. On the other side the Eastern Fleet bottled up entrance to Chittagong, Khulna and other East Bengal ports while aircraft from the carrier, *I.N.S. Vikrant*, destroyed and sunk Pakistani vessels and installations gaining command of the Bay of Bengal.

At the commencement of the 1971 war, the Indian Navy consisted of 40,000 men, and included the 16,000-ton aircraft carrier *Vikrant*, four "F" Class submarines, two cruisers, three destroyers, nine destroyer escorts (including five Soviet *Petya* Class vessels), one general purpose frigate, five anti-submarine frigates, an unknown number of *OSA* Class missile boats, together with several other lesser vessels such as patrol boats, minesweepers, sea-ward defence boats and landing craft. The *Vikrant* still carried the largely obsolete *Seahawk* attack aircraft together with *Alize* maritime patrollers, and *Alouette II* helicopters.[35]

As compared to this the Pakistan Navy consisted of 10,000 men, and included four submarines, two destroyers, three destroyer escorts, two fast frigates, and other lesser vessels such as patrol boats and minesweepers. Pakistan's Naval Air Force was virtually nonexistent and consisted of only two UH-19 air-sea rescue helicopters. It was clear that the Pakistan Navy on its own constituted no threat to the Indian Navy, but in any attack on Karachi harbour on the Arabian Sea, the Indian Navy would have to seriously reckon with the Pakistan Air Force. It was the ability of the Indian Air Force to simultaneously draw the main fire power of the Pakistan Air Force that enabled the Indian Navy to complete its operation successfully in West Pakistan.[36] In the eastern theater, the *Vikrant* was able to operate easily in the Bay of Bengal attacking vessels that lay in the East Bengal ports only because the small Pakistan Air Force stationed there had been quickly decimated by the Indian Air Force in the first few days of the war.

The Navy's role in the war, however, drew widespread praise even from the more sceptical Army generals. A former G.O.C. Eastern Command during the Sino-Indian war, Lt. General L. P. Sen, wrote :—

> "India's Navy shot into the limelight with successes so spectacular that they leave one gasping. Inclined to be treated as the Cinderella of the armed forces the navy has virtually overnight dispelled doubts about the justifiability of the money that has been expended on her. She has proved that she is not just the showpiece that people were inclined to believe she was. She has demonstrated in no uncertain manner that she is capable of inflicting serious damage to ships and harbour installations when required to do so."[37]

With the defeat of Pakistan and the creation of Bangla Desh, a new phase began in 1972, perhaps not just for the Indian Navy but for

Indian defence and foreign policies as a whole. The subcontinent had been transformed; the two-nation theory of Hindus and Muslims had been exploded; and the balance of power in South Asia—if this did exist at all had collapsed. At least one source of the dual threat to India had been considerably reduced. In the lightening campaign the Navy had, however, established two major points. First, that it had a positive and important role to play in the defence of India. Second, "going Soviet" in vessels and equipment had been a sensible decision.

While the first had been a fundamental objective of the Navy, the second had raised considerable controversy even within the Navy itself. Neither the Army nor the Air Force had been so inextricably tied to the British counterparts since independence as the Navy had been. The Navy though British, and had always bought British. The insistence on the part of the Defence Ministry to go in for Soviet submarines and vessels to keep in line with New Delhi's political shift towards Moscow had been strongly disfavoured at Naval headquarters. According to K. Subrahmanyam, a former Joint Secretary in the Ministry of Defence, and now Director of the Institute of Defence Studies and Analyses in New Delhi :

> "The Indian Navy's association with the Royal Navy was even closer than that of the other two services with their counterparts in the United Kingdom. Though there was a Soviet offer to make available naval equipment in 1964, it was not accepted till September 1965. Meanwhile, the British conveyed their unhappiness about the possible development of cooperation between the Indian and Soviet Navy and hinted at its adverse impact on Indo-British naval cooperation."[38]

But the war had begun to produce a profound shift in attitudes at Naval Headquarters. The smaller *Petya* Class patrol vessels and *OAS* Class missile boats from the Soviet Union had proved to be a formidable combination in operation and their costs were considerably lower than the larger Leander Class frigates being manufactured with British collaboration at Mazagon Docks in Bombay.

Yet it is the first point—the role of the Navy—which the 1971 war had purported to have established, that is now open to question. A Pakistan separated from its eastern province by a thousand miles of Indian territory would in the last resort have to rely upon her maritime capabilities should an Indo-Pakistan war stretch that far. That Pakistan too had neglected her Navy only reflects the identical mentality of New Delhi and Islamabad, both of whom had been nurtured in the British Indian Army way of thinking. The creation of Bangla Desh now implies that this dependency in Pakistan is also gone. A reduced Pakistan with less resources will be a lesser threat, and future Indo-Pakistan wars would appear likely to be settled on land and in

the air. The Navy will have the limited task of encircling Karachi harbour.

IV

What therefore is the future role of the Indian Navy in the defence of India? In February 1974, Admiral S. M. Nanda, the Naval Chief who commanded operations during the 1971 war, declared that the importance of the Indian Navy must necessarily grow as the maritime capabilities of India continued to rise. It was the sum total of maritime growth that needed attention for it had a strong bearing on Indian economic development and prosperity.[39] Moreover, an all round shipbuilding program, both commercial and military, could produce economies of scale within the infant industry and spin-offs to ancillary industries, making the heavy capital investment needed by the Navy more economic.

The prospect of a coordinated military-commercial effort which had been advocated by successive Naval Chiefs of Staff since 1963 appears to be dim. To an enquiry by the Committee on Public Undertakings as to how the naval program of shipbuilding fitted in with the overall maritime growth and shipping requirements in the country, the Managing Director of Mazagon Docks stated that there was little coordination and synchronization under the first three five-Year Plans between 1951 and 1966.[40] It was only after mid-1966 that the naval shipyards started to build sophisticated ships. Presently all three shipyards under the Defence Ministry together with the public sector commercial Hindustan Shipyard, Limited at Vishakhapatnam are equipped to embark on a major shipbuilding program to cater to the commercial needs of India. Hindustan Shipyard is able to build cargo freighters upto 12,300 tons deadweight capacity, Mazagon Docks frigates, cargo freighters, and passenger ships up to 15,000 tons deadweight capacity, and all the Defence Ministry shipyards were capable of constructing coasters, dredger, tugs, trawlers and other lighter craft. Another major shipyard is now being built at Cochin which is expected to build even bigger ships.

While Mazagon Docks was capable of designing and developing vessels suitable to the needs of the giant Government-owned Shipping Corporation of India, it faced stiff competition from abroad. At present 90 per cent of the merchant ships brought under the Indian flag have been obtained overseas.[41] Thus, lacking proper coordination between the commercial and military sectors, and because the shipbuilding industry is still in a nascent stage, hopes for such maritime growth based on indigenous sources are not likely to be realized in the immediate future. In any case, this argument alone, though imminently sensible, is unlikely to sustain the continuing demands of the naval lobby for a

greater slice of the defence budget. In 1973 it had received 10 per cent of the defence allocation, a substantial improvement over earlier years, and its capital share had outstripped that of the Army (See Table One). But to be able to maintain this rate of recovery in the future would be a difficult task indeed.

If the Indian Navy still considers itself under-represented, they will be compelled—and it would be politically prudent—to demonstrate a credible military threat to India and to define its role in blocking it. It is here that the present Indian perceptions and assessments of the new international trends (stated at the very outset of this paper) become relevant. Unfortunately, this situation may lead to a dangerous and incremental sequence of events:—

(1) The arms race in the Persian Gulf and the Middle East, the portending great-power rivalry in the Indian Ocean, an uncertain Chinese stance in a post-Mao era, and the Indonesian naval build-up may call for re-thinking in India on her present strategic posture.

(2) Among alternatives there is strong likelihood that the threat to India will be perceived to have shifted in its locus from the northern and northwestern land forntiers to areas west, south and east of the subcontinent calling for a bolstering of the naval program.

(3) Such a new strategic outlook will neccessitate for a proportionate re-distribution of the present levels of allocation among the Army, the Air Force and the Navy.

(4) In the ensuing rivalry that will be generated among the three Services, naval demands for capital and revenue grants may be distorted and exaggerated. This may be supported by excessive perceptions of threat stemming from the arms race in the Middle East, and the naval programs of Iran in the Persian Gulf, Indonesia in the eastern Indian Ocean, and China in the South China Sea.

(5) A new mix in the allocation to the Services and the resultant new strategic policies will re-inforce the naval lobby, further upsetting traditional Army domination of the Services and deflating their demands for bolstering the northern defences.

This undesirable slide needs to be guarded against by ensuring a realistic assessment of the new international trends, and by translating this into a fair distribution and balance among the three Services. On present indications it may be desirable to shift from the current 7-2 1 distribution among the Army, the Air Force and the Navy, to a 5-3-2 distribution. The Indian Navy's present share of the defence allocation must be at least doubled. Above all, continuing deficiencies in the basic capital equipment required by the Indian Navy must be swiftly rectified.

FOOTNOTES

1. *Statesman*, January 6, 1974; *Hindustan Times*, February 12 and 13, 1974. There were also fears expressed of U.S. arms policy in the Middle East and particularly the Iran-United States "arms deal". *Hindustan Times*, February 1, 1974.

2. *Hindustan Times*, February 13, 1974.

3. Most of the Indonesian fleet had been acquired before President Sukarno was deposed in 1966. Sukarno had envisioned a Greater Indonesia that would include all the Malay peoples of South East Asia, and this dream was given a boost by a billion dollar loan from the Soviet Union which was lavishly spent on increasing the strength of the Indonesian Navy. Commander Ravi Kaul, "Naval Developments in the Indian Ocean", *Chanakya Defence Annual*, 1969, Allahabad : Chanakya Publishing House, 1969, pp. 237-251. An oil producing state, Indonesia like Iran now carries the ability to further strengthen its Navy.

4. Interviews.

5. *Times of India*, April 30, 1963. For a short history of the growth of the Indian Navy between 1947 and 1962, see the chapter entitled "Indian Navy" in Lorne Kavic's *India's Quest for Security*, Berkeley and Los Angeles : University of California Press, 1967.

6. *Times of India*, February 3, 1964.

7. *Hindustan Times*, January 28, 1964.

8. For the general naval debate, see *Lok Sabha Debates*, November 30, 1964. Third Series, Vol. 34, No. 11, pp. 2323-2328.

9. *Lok Sabha Debates*, April 5, 1965, Third Series, Vol. 41, No. 32, p. 7573. See also *Hindu*, April 6, 1965.

10. Interviews. There was also a tendency now to be more precise about naval requirements as compared to the earlier vague demands for submarines at periodic intervals. See, for example, statements by Rear-Admiral B.A. Samson and Rear-Admiral S.M. Nanda in the *Statesman*, June 2, 1966; and by Vice-Admiral A.K. Chatterji in the *Indian Express*, June 3, 1966.

11. See the *Hindu*, May 23, 1966; *Statesman*, June 2, 1966; *Indian Express*, June 3, 1966; and *National Herald*, August 15, 1966.

12. Annual *Report*, 1965-66, Ministry of Defence, Government of India, New Delhi, p. 22.

13. *Hindu*, December 11, 1966.

14. *Hindu*, March 10, 1967.

15. *Defence Services Estimates, 1967-68*, Ministry of Defence, Government of India, New Delhi. In the Budget Estimates there was an increase in the allocation under "Purchase of Naval Vessels" from Rs. 1.6 crores to Rs. 5 crores. See also report in the *Hindu*, March 25, 1967.

16. *Defence Services Estimates, 1967-68*. This allocation of Rs. 3 crores for the expansion of the two naval dockyards was out of a total allocation of Rs. 4 crores for additional investment in the defence public sector undertakings for that year.

17. *Lok Sabha Debates*, June 26, 1967. Fourth Series, Vol. 5, No. 24, pp. 7558-7565. Debates summarized in the *Times of India*, June 27, 1967.

18. Dilip Mukerjee, "The Unfinished Debate over the Navy's Long-term Role," *Statesman*, July 19, 1968; Sisir Gupta, "Indian Navy's Role", *Times of India*, April 15, 1968.

19. *National Herald*, July 7, 1968.

20. *Statesman*, October 24, 1968.

21. *Hindustan Times*, December 23, 1968.

22. *Hindustan Times*, January 13, 1969. Although the submarines had been commissioned in late December 1968, first reports in Indian newspapers came only two weeks later.

23. The formal constitution of an Eastern Fleet with Headquarters in Vishakhapatnam was established in November 1971. *Hindustan Times,* November 20, 1971. In 1968 the annual defence budget made provision for expanding the Vishakhapatnam base and these allocations have continued since. The concept of operating a separate fleet from a major base on the eastern shores had been set in motion.

24. *Times of India,* December 16, 1968.

25. *The Times* (London), March 4, 1968.

26. For an overall analysis of the *I.N.S. Vikrant's* role in the Indian Navy, see a recent article by the former Chief of Naval Staff, Admiral A.K. Chatterji, "Fighters for Vikrant", *Hindustan Times,* December 7, 1973.

27. *Hindu,* February 19, 1969.

28. *Hindustan Times,* March 16, 1969.

29. Commander C.V. Nedungagi, "Need for Expansion of the Indian Navy Exaggerated", *Statesman,* June 18, 1969.

30. *Hindustan Times,* December 27 and 29, 1969.

31. Admiral A.K. Chatterji, "The Navy," in *Defence of India,* Press Council of India, New Delhi : Vikas Publications, 1969.

32. *Ibid.,* p. 22.

33. *Defence Services Estimates, 1970-71.* The Estimate provided for Rs. 22 crores for purchase of vessels as against Rs. 17 crores in the previous year, and Rs. 7.5 crores for the continued expansion of Vishakhapatnam base as against Rs. 6 crores in the previous year. For a report on the presentation of the defence budget to Parliament, see *Times of India,* March 1, 1970.

34. *Hindustan Times,* May 6, 1970; and the *Times of India,* May 15, 1970. On the matter of submarines, the correspondent of the London *Telegraph* reported that the Indian Navy was dissatisfied with Soviet submarines. See *The Daily Telegraph* (London), August 10, 1970.

35. From *The Military Balance, 1973-74.* 10 *Seahawks,* 5 *Alizes,* and *2 Alouettes* can be carried on the *Vikrant* at any one time.

36. Interviews.

37. Lt. General L.P. Sen (Retd.), "The Rise and Rise of the Indian Navy", *Hindustan Standard* (Calcutta), December 9, 1971 ; see also Inder Malhotra, "Indian Navy's Finest Hour", *Times of India,* December 15, 1971; Rear-Admiral C.L. Bhandari (Retd.), "Bravo Zulu, Keep on Hitting", *Hindustan Times,* December 30, 1971.

38. K. Subrahmanyam, "Our Naval Superiority", *Motherland,* January 26, 1972.

39. Inaugural speech by Admiral S.M. Nanda, former Chief of Naval Staff, at the Seminar on the Indian Ocean, Jawaharlal Nehru University, New Delhi, February 18, 1973.

40. Committee on Public Undertakings (1968-1969), 42nd Report, *Mazagon Docks Limited, Bombay,* Ministry of Defence, Lok Sabha Secretariat, New Delhi, 1969, pp. 4-6.

41. *Ibid* , p. 17.

RATIONALISED INFRA-STRUCTURE FOR THE DEFENCE PRODUCTION EFFORT

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THE 1971 conflict with Pakistan has amply proved the justification for the policy of self reliance in the matter of Defence Production. It is however paramount for us to be more vigilant and careful, if we are not to be caught on the wrong foot, in a future conflict. The one area, in which there should be no flagging of interest is the 'Defence Production'. The security of the nation among other important things will depend to a large extent on the efficient functioning of the Defence Production Departments. Keeping this in view, it is inevitable and also desirable that the Defence Production effort should be expanded. But, ours is a poor country and we can ill-afford the massive defence outlays enjoyed by other developed countries. Economy and productivity will always remain the keynotes of any expansion programmes for Defence Production. It is towards a rationalised re-organisation of Defence Production Infra Structure, keeping into view the need for economy and productivity, that this paper is dedicated. This may perhaps be the most opportune time to carry out an evaluation of our past performances. Our policies have been tested on the anvil of actual battle conditions and we are at present in the process of planning expansions as well as establishing new Units. Hence now is the time to look back on our performance and set forth a workable Organisation for the future capable of delivering the goods. Any misdirection towards the re-organisation and expansion at this juncture, apart from being costly is likely to be disastrous.

At the outset, it may be advantageous to recapitulate, in general terms, the expectations of an organisation. It is not the intention to consider all the requirements of a self sustaining and a vigorous organisation, which is a subject by itself, but only to enumerate those essential principles, which are most relevant to our discussion, and then to comment on their applicability or otherwise. Any student of organisation would know, that for an organisation to be a viable entity capable of meeting the laid down targets, the following pre-requisites are essential :—

(a) The head of the organisation should understand perfectly the task entrusted to him. It is surprising, how often an ambiguity exists leading to mis-direction.

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(b) The head of the organisation should have at its disposal, the correct combination of officers, staff, services, plant and machinery to perform the entrusted task.

(c) All constituent Units which will help the top man to achieve the entrusted task should be directly responsible to him. He should not be in a rediculous position of having to ask outside help, frequently, to achieve his aim.

(d) Where the specialised function needs outside help, it should be obtained from an external source, but the advice as received, with regard to the specialised staff function, should not be mandatory. Its acceptance or otherwise should be left at the discretion of the top man of the organisation.

(e) Lastly, where many constituent organisations are to be created, these should be so formed that each is a composite whole having all essential constituents, and it deals with not more than a single specialised field. There will be no harm of course in having more than one organisation dealing with the same specialised field. If any thing, this will result in healthy competetion.

Some of the above mentioned pre-requisites of an organisation may require further explanation. Whereas the first two pre-requisites are self explanatory, the same cannot be said about the next two. These are best explained by taking the example of a fighting formation of the army. Let us take the case of an Infantry Brigade Commander. He has been given the task to attack and capture a certain area now occupied by the enemy. He has of course the infantry troops directly under him consisting of three battalions of infantry, which he could use. He may however require outside help, to perform his task, such as armour support, artillery support, signal communications, transport, medical cover, supplies etc. He makes a bid for them and gets these allotted from the divisional commander. After all the planning has been completed, the actual operation is commenced. Till its successful completion, following are the aspects of command and control which are worth noting.

(a) Initially he gives formal orders to his battalion Commanders, and also the heads of all the arms and services put under his command for the purpose of the operation.

(b) Thereafter he lets them carry out their detailed planning and execution, being continuously in touch with them either to modify his previous orders, if such a need arises or to be available for clarification and amplification to his earlier orders.

(c) The heads of arms and services implicitly obey the instructions of the brigade commander, and continuously advise him in the employability of their troops and equipment. In no case, and this point is worth noting, is interference done or permitted from the higher commanders of arms and services, in the

operational plans of the brigade. Advise if any is not at all mandatory, but may be accepted or rejected by the brigade commander as deemed fit by him.

This is an excellent example of the correct utilisation of the principles of organisation, which is worth emulating. Before we proceed further, a word about the last pre-requisite enumerated above. The requirement is for a composite whole, dealing with a single specialised field. The principal as enunciated is quite explicit and it would seem, not liable for more than one interpretation. This is not so when one actually applies this requirement practically. For example one may call the production agency dealing with the manufacture of medium tracked vehicles as one composite whole and the development agency for these to be a separate composite whole. Yet a third agency namely the inspection organisation, may then be considered as another separate composite whole for medium tracked vehicles. We would then have three separate and distinct organisations for medium tracked vehicles, dealing with the functions of development, production and inspection. This could conveniently be called **functional** type of organisation. If this reasoning is followed further we would have three functional organisations for Light Tracked vehicles also, dealing with the three separate functions of development, production and inspection. That takes us to a total of 6 Organisations. At this stage we might do a simplification by grouping the 2 production Units into one Organisation, and a similar grouping of the development and inspection agencies, again giving us 3 functional organisations the scope of each of them enlarged to cover both light and medium tracked vehicles. This grouping does not alter the type of organisation, which still remains **functional.**

Here we must pause to state that, this is the type of reasoning which has led to the existing structure of the Defence Production Effort. It is a functional structure with Production, Development and Inspection functions fairly distinct and seperate. Each separate functional agency has its own departmental head and a separate budget allocation. This existing functional structure is shown at Appendix 'A'.

Perhaps such a structure was inevitable Budget allocation and increases were being made piece meal and for specific purposes. The stress may have been to get something on the ground and atleast make an initial start without having the time or inclination to worry about, principles at this stage. Adhoc sanctions for creating new Units were given based on requirements of departmental heads, without corelating them to overall objectives. All this is conceded and as already stated may have been inevitable. The time has however now come to pause and review the situation. The money position has become tight and likely to become more so. The rupee is required to go further, and yet the 'Defence Production' effort must be strengthened further. Towards

this aim the author wishes to recommend a **Federal Structure** for the Defence Production Effort.

Reverting back to the requirement of 'a composite whole, dealing with a single specialised field', we have seen one interpretation of this principal, giving us a functional type of organisation, which we saw was the one now existing in the Department of Defence Production. We would now deal with another interpretation of this principal, which according to the author is more suited to the requirements of Defence Production. This type of organisation is called federal structure, and in brief has a grouping of all functions, under one head, required to perform a single specified task, or to achieve a single enunciated goal. Both the name and the structure is not new at all, ample references and details being available in all literature dealing with the theory and practice of organisation. Practical examples of this type of structure both in India and abroad are also not wanting. In fact the example of an operational brigade discussed above, consisting of fighting elements, supporting arms and services, is an ideal example of a federal structure. The brigade commander was given all the specialist functional units, to perform the necessary task. They were very much under his command, to move, deploy, utilise and exercise control as he wished. This was only possible when the Brigade Commander was very clear about what is to be achieved, what all he needs to achieve it and then was given the required elements to achieve the same. This cannot be said of the heads of organisation in the department of Defence Production. Ideally a federal structure dealing with say medium tracked vehicles should have all the functions of production, development, inspection, personnel administration, finance, stores etc., all under him. Similar federal structures could be formed for light tracked vehicles, wheeled vehicles, small arms, field guns, anti aircraft guns, field ammunition, light ammunition etc.

The reader would have undoubtly seen that this type of organisation, by and large is as per the pre-requisites which had been enunciated earlier. Gone is the need for the production agency to satisfy an outside inspector, who may enforce a parochial view point of Quality Control, with utter disregard of the overall situation and changed circumstances. Also made redundant is the dependence on an outside agency for essential services such as clearance of incoming materials and goods, supply of blue prints, holding of master drawings etc. No longer will there be the need for modification and development to the existing design being done by an outsider, who may have been frightfully burdened with other projects, and will allocate a low priority to it. In fact the whole organisation will be a balanced and vigorous machine, where the functional elements would be grouped together for the first time to achieve a common goal, without

coming in each other's way, and if it might be said with the tongue in cheek, without building their separate functional empires.

At this stage a question might be asked, as to the place of existing large functional organisations for example in Inspection and Development. In the suggested federal structure the various inspectorates serving the production agencies would become under Command of the production Unit, initially perhaps as a separate entity later to be merged with it. The development work would also be undertaken by a small team under the production head, either newly formed or organised by milking the existing Research and Development Establishments. For new projects it will be best if some portion of the project team is posted to the production Unit, to do the further development work, once the production is commenced. Some specialist inspection and development Units may still have to be retained. For example an advisory Development and also Inspection Unit under the Department of Defence Production will still be needed. It will however be a staff function and of purely advisory nature. Such an inspection Unit could take over the 'Quality Audit' functions and may also have central gauge manufacturing and testing units, as well as sophisticated caliberation equipment.

A fairly clear picture has now emerged of the federated defence production structure. A few finishing touches may still be necessary to this, which however are a matter of detail and can be filled in easily once the basic principles as discussed above are kept in view. Hence in the interest of brevity, these are not discussed at length. A few examples will clarify as to what is meant. The Zonal Inspectorates may still be required to inspect trade items. These could be conveniently grouped under one headquarters, which may also be the advisory inspection agency to the federated organisations. For new equipments, project teams should be formed, which may be grouped together in establishments for giving administrative support to them. It is felt that a nominated project manager with his team is essential for all major projects. This will ensure continuity during development and also during production, since a portion of the project team could be shifted to the production Unit, once production is commenced. The new federated organisations could be called 'Corporations'. These are a few examples of certain details which are best worked out by people in touch with the particular departments and establishments and would know their peculiar problems. Hence any further deliberation on the matter of similar details would be rather premature.

We are now in a position to set up the proposed federal structure, on an organisation chart. This has been attempted at Appendix 'B'. It is not the best method of representing the organisation, which rigidly represents distinct lines of responsibility without stressing the horizontal

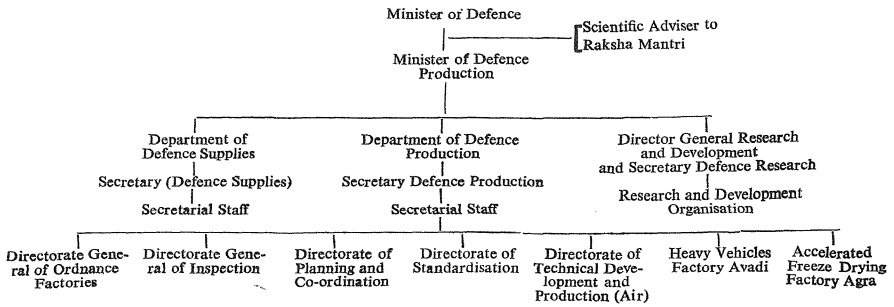
inter-play between constituent units, which is so very essential for result oriented set-ups. Hence the reader is requested to view the chart keeping this into view. It is but a skeleton with the flesh, blood vessels and nerves missing. Some organisational theorists refuse to draw an organisational chart, unless accompanied with an organisation manual, defining in detail the tasks and functions of each sub-unit together with clear indication of inter-related activities involving many sub-units. Not that such an exercise is not necessary, but this can only be done after we first have the organisation tree. In this paper only the first step of having the basic organisation chart has been attempted leaving the preparation of the organisation manual for a more opportune time.

The recommended re-organisation will definitely render quite a lot of technical manpower now employed in functional units, surplus, which could be advantageously absorbed in the newly formed production oriented Corporations. This will amount to substantial savings. The heads of the Corporations would now have been given all the functional units they need to produce the necessary equipment. This would definitely make them more productive without any extra financial outlay. Hence it would be seen that the need for economy and productivity has been met in the new federal type structure.

The last word has not been said in the matter. Many will be the doubts, apprehensions and clarifications which will be raised. The implementation of the new Organisation will raise a host of technical and administrative problems. The author is profoundly aware of this. The basic question which still needs to be answered is whether, we are prepared to take the bold step of reorganising the Defence Production effort in a more rationalised manner, thereby getting greater productivity for the same financial outlay, inspite of all the difficulties which may come up. It will be a bold progressive step, requiring enlightened and energetic implementation. Let us hope therefore that we do not commit the mistake of risking too little and hence achieving very little. And as a lawyer would have put it "The case of the prosecution rests here ?", the matter is referred to the judgement of the reader.

Appendix A

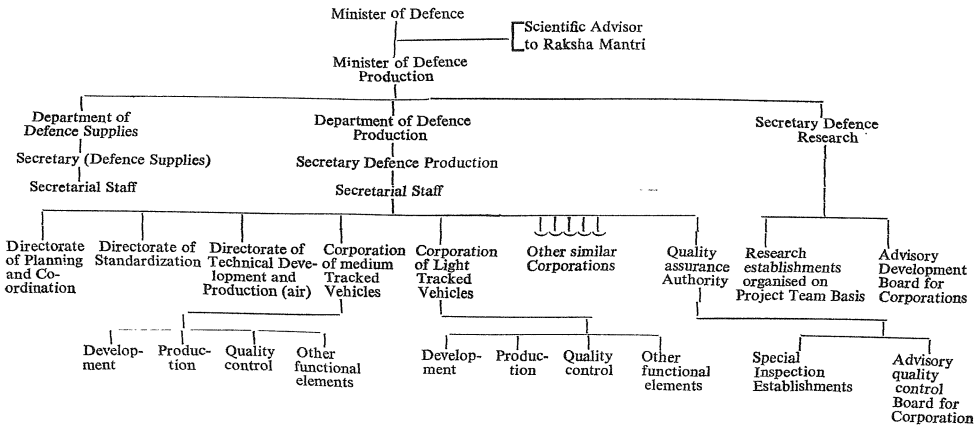
EXISTING STRUCTURE OF DEFENCE PRODUCTION ORGANISATION ON FUNCTIONAL BASIS



Note 1 : The appointment of Scientific Adviser to Raksha Mantri, Director General Research and Development, and Secretary Defence Research are at present held by a single person.

2 : The chart does not include Defence Public undertakings such as HAL and BEML, which are not under the Department of Defence Production, and are being run as other public sector undertakings, under the Ministry of Heavy Engineering.

PROPOSED DEFENCE PRODUCTION STRUCTURE FEDERAL TYPE



Note 1 : Scientific Advisor to Raksha Mantri and Secretary Defence Research could be the same person as hitherto before.

2 : If the number of corporations is too large, they may have to be grouped regionally for purposes of control somewhat like the present DGOF set up.

THE BLACK BERET INFANTRY

COLONEL R S RAWAT

MOUNTING infantry in vehicles was felt necessary since the modern weapon technology suddenly raised its output of fire power per man resulting in mass butchery of foot-soldiers. To survive against heavy concentration of direct and indirect fires from the sweeping machine guns of World War I to the massing of vast quantities of HE, bombs and shells of the World War II and up-to-date ; the Infantry arm continously aims to seek cover and armour protection with a view to sustain her battlefield mobility and ultimate survival. Historically, in this direction the Germans were the first to introduce their elite 'Stosstmppen' closely followed by the creation of the 'Commandos' in 1940s and their close kith and kin—the Air Borne and Paras, and later the Chindits of the Wingate's Columns ; and finally the current American concept of 'air cavalry practised in Vietnam'. These rather elementry historical facts are mentioned while considering the overall question of weapon system in general and our Armour Personnel Carriers under study in particular ; if the devoted infantry men do not want to be relegated as 'scavangers of the battlefield and the jackals of the tanks' in today's changing Army while accurately visualising their precise roles in the future conflict of the nineties.

Even the Liddel Hart idea of 'fighting mounted' by the mounted-infantry element within the framework of an armoured formation was merely to lend cross country mobility to the foot soldier to enable her follow closely the Tank as the Knight and clear any obstacles encountered —truely a follower's role. The APC carried infantry therefore had to content with her image of a mere battlefield taxi ; a bullet-proof transport to carry a large body of infantry men with very little armoured protection into the vicinity of a battlefield and to leave them alone to fend on to their objectives on foot. This conventional concept of employing Infantry in follower's role persisted for long in many armies barring the German army. With this concept, predominently the volume or the number-carrying capacity decided the structural and mechanical design of an APC rather than the tactical concept of her ability to fight mounted or dismounted alongwith tanks to assault right onto and beyond objectives. The former led into a fundamental error in designing some of the older generation of APCs used by infantry for this no one was to be blamed except the infantry men who always suffered from a complex in presence of black beret boys. In the latter concept however design of a vehicle is based on the factors of fire power, high mobility and adequate

armour protection. In short, the fighting capability and the tactical load would basically determine the size and mechanical efficiency of this kind of APC. The two views contradictory in nature, whether to employ APC as an armoured taxi to cart infantry onto or very short of the objective; or expect her to fight by themselves onto and beyond the objectives supported by artillery and tank force, is the basic issue upon which the design of our future APC would hinge.

If Infantry is to retain her position as the basic arm in eighties and thereafter; and its primary battle mission still remains to locate the enemy; close up and destroy the enemy's fighting capabilities then the problem warrants a different treatment. Viewed in this context wheels, tracks and more recently air (in bullet-proof helicopters) should be merely treated as various means of physical mobility to assist Infantry perform her main role effectively to bring upon full armoured might and shock impact on the enemy. This is the current image of an infantry combat vehicle—the ICV which in eighties should completely replace her former conventional image of an APC thus retrieving once again the true status due to an infantry soldier.

EMPLOYMENT

The often current conception that mechanised warfare based on mass employment of mechanised forces primarily useful in a nuclear condition, is not wholly true. In considering the current and future concepts of the mechanised Infantry, some of the potential threats even in conventional conditions could be assumed on the following patterns :—

(a) The enemy's capability together with tactical intelligence through space craft and other advanced material (this has been reported to be used effectively by the Egyptians during the Yom Kipper War on a twentyfour hour surveillance basis providing relatively up-to-date information).

(b) An all weather capability in combat surveillance and target acquisition in an all weather environment of a not too distant electronic warfare.

(c) A missile artillery system of precision guided munitions very accurate and highly responsive to ground tactical unit commanders.

(d) Weapon systems capable of destroying opposing aerial and ground vehicles.

(e) Capability to concentrate large numbers of aircraft, tanks armour vehicles and men at any point in time on the battlefield and capable of employing counter-bombardment devices including technical nuclear weapons almost considered a part of conventional artillery.

(f) Ability to field more armoured or aerial vehicles at the beginning of the showdown.

While accepting the enemy's capabilities mentioned above, Infantry arm should have the capability to continue offensive or defensive and

other mixed operations. The defender of the tomorrow would aim to trade space not for time as done today but for the enemy's fighting potentiality. The Infantry force specially organised should capitalise on mobility, information collection and for power advantages. In the eighties, the defender's aim in holding certain piece of ground wouldn't be to maintain merely the conventional battlefield structure but its use as a springboard to destroy the enemy's fighting potentiality. Such a task could be ideally achieved through the Combined Arms Regiments than one with different berets of today. In this respect, our ground tactics now would do well to adopt the conventional naval tactics of destroying the force rather than holding the terrain. This warrants a new Commander at the helm of our mobile force irrespective of his parent arms with a clear mobile preception than one with a conventional head gear. It would now in turn highlight the future importance of spoiling attacks, aerial ambushes by armed helicopters and large scale aggressive raids along the enemy's routes of approaches. The battle of attrition now in the forward defended areas and zones would be mainly fought by the mechanised infantry battalions; and the tank forces would be kept in reserve for the main counter-attack stage. Once again the Infantry (even she may have to do black berets) would thus regain her lost status. This is perhaps the pattern of a defensive battle in not too distant future which should be taken count of while planning for the eighties. The present day carriers (APCs) if designed with its limited mobility fighting characteristics, thin armour will not be able to operate at all not to speak of meeting challenges of any future battlefields. It is the tank vehicle alone which would ideally meet the challenges of a future mobile battle. Who would man such a contraption the green or black or even blue berets, is just a matter of contingency ? In the ultimate analysis, to cite a crude example while in search for a stallion a donkey should be preferred over a mule; for the former atleast has potentiality and creativity. It is easier to build a castle later, if given a board foundation today rather building in pockets with a limited aim in view. Purely from cost effective point, the former lends a better solution.

The eighties' doctrine for mechanised infantry should be based on a mission-oriented force. The Infantry should of course achieve her aim by either mounted or dismounted depending on the requirements of a tactical mission. She would however in her present shape be more job-tailored; need-based hence more Con-effective. Tactically, employment techniques would vary from the purly dismounted actions to predominantly mounted actions, forming part of a tank—heavy force during an exploitation stage where speed and compactness of the force would be the basic considerations. Mission permitting, by-passing pockets of resistance would be a normal feature—a role beyond the visualization of present day organised infantry. In offensive roles, Infantry in ICVs

will have the capacity to approach as close to the objective as possible in order to obtain maximum protection enroute and thus conserve their precious energy for the final show. When heavily engaged only in fights essential for achieving mission objectives, infantry men may dismount from the ICVs for that action. Mounted action however will normally be conducted all the way to the objective. The decision on how to fight mounted or dismounted would be the Commander's prerogative. But one thing is certain that with the present concept of ICV, the combat vehicle would become an integral part of the squad, highlighting the cardinal principle that the vehicle portion is no longer treated as a taxi, this would call for a new attitude. The vehicle and the squad members intimately orientated to a single aim should be continuously mutually supporting both while mounted or dismounted. The organic fitted weapons in the vehicle (machine gun, anti-tank weapon or AD gun in single or diverse roles) would serve as an anchor-fire support element for the assaulting dismounted squad. The ICV commander with a gunner at the vehicle gun and organic radio communication will have now the flexibility to control the battle (squad or the vehicle) either ground or vehicle based. This will in addition, no longer compel the armour to move at the speed of the walking infantry as today. Thus Infantry in ICVs will organically acquire greater flexibility of employment in meeting the very swift changing conditions of any future battlefield.

TERRAIN RESTRICTIONS

At times some doubts are expressed by the users in visualising the employment of ICVs in our environment. While the desert terrain is ideally suited for these vehicles, the experience of the Vietnam operations indicate the immense possibilities of their effective employment even in thick congested jungle areas of our terrain-like region. Some of the important roles in which they can be employed are :—

(a) movement to contact and launch coordinated attack ;
(b) reconnaissance in force ;
(c) cordon and search ;
(d) base camp, airfield and landing zone protection ;
(e) fighting in built up areas ;
(f) attack of fortified villages and canal defences ;
(g) road clearing and convoy escorts.

The ICV as an Infantry carrier and weapon platform has been successfully employed as a fighting vehicle in conjunction with armoured cavalry units. When operating independently in an offensive operation, the ICVs initially make contact reconnoitring by fire. The riflemen then dismount and conduct a search while ICVs are employed to screen,

block or support by fire ; exploiting inherent mobility and fire power of its machine gun. In the defence, while dismounted infantry prepare fighting positions, the ICVs and tanks are positioned between the dismounted Infantry and assigned sectors of fire. Here the staying power of the ICV lends the perimeter defence a valuable advantage. Mechanised infantry and tank units are ideally suited for cordon and search operations. In normal tactics, while Infantry acts as a blocking force, tanks are used in enveloping roles. With Infantry now in ICVs, this technique can also be reversed achieving an extreme example of coopetion, integration and flexibility of roles.

ORGANISATION

The future mechanised battalions will be smaller and lighter. They should organically possess adequate resources to accomplish their battle missions during normal offensive, defensive and other operations in combination. It should be considered for universal employment in principle and it should be predominantly made an integral part of armour formations purely from the cost effective angle. The ICVs should be held on the WET of a battalion and should be treated integrally as part of a weapon system. In addition, it should be effectively utilised in forms of resupply, casualty evacuation and command post vehicles.

The experience of the Vietnam operations brought in focus the mechanised infantry battalion's dire requirement for a fourth manoeuvre element to provide additional security forces and an organisational flexibility. Two organisations suggested are—one with a HQ coy, and adm coy and four rifle coys ; the other with a HQ coy (reduced in strength and equipment), an adm coy, three rifle coys and an armoured tank troop. The tank troop will provide the anti-tank, motor and scout elements, thus reducing the size of HQ coy. Both should be tried out and the one giving more flexibility should be adopted.

Each lorried infantry battalion should have organically rifle coys and an armour tank troop. In this context, the commander of the lorried infantry brigade need not be necessarily a tank corps officer as is the convention today. For that matter even the armoured brigade Commander may not be one wearing black beret as of today. Thus this new conception of a lorried infantry brigade with lorried infantry battalion would ensure real integration of armour with mounted infantry and thus help in solving all the future problems of infantry tank cooperations, a subject though well preached but less achieved in battle.

CHARACTERISTICS

The APCs of all the world armies barring the German Army weigh from thirteen to fifteen tons with a carrying capacity of a section strength (nine to ten) excluding the crew. Its power engine ranges from 250 to 330 H.P. giving a H.P. to weight ratio of 14 to 20. Some of

these APCs have turret mounted guns of 20 to 30 mm calibre besides a small calibre machine gun. The German ICV (Mardar) weighs 27.5 tons with a crew of ten (Commander two gunners and six infantry men). Its height is 2.74 inches with 3.16 inches width and 6.68 as length. The latest US version is MICV, a successor to M 113 weighing seventeen tons fitted with 20 mm cannon. It is lighter and smaller than Marder though having the same basic characteristics.

Keeping in view our requirements and the world trend on the development, the ICV of 1980s may retain some of the following major characteristics :—

(a) Low silhouetted, lighter and smaller for mobility and presenting a smaller target (height 2.8 m, length 6.7 m, width 4 m and wt. 19 tons).

(b) Accommodate a section of infantry men plus a crew of two.

(c) Amphibian (fording across the canal and swimming through a river).

(d) Fitted with full night vision and navigational equipment.

(e) 2 × 7.62 mm machine guns with an all round traverse of 360°, one mounted at the front and one in a rear cupole. Anti-tank firing capability.

(f) Road speed/Range—60 km per hour/600 km.

With suitable modifications, flame thrower, command post vehicle, mortar carriers and other carriers for casualty evacuation or supplies would be some other versions of this family.

Conclusion

The mechanised infantry battalion of the future should be the army's most versatile unit capable of fighting mounted or dismounted encounters to include air mobile operations and a permutation of these. The main weapon of such an infantry battalion will be an ICV with its organic anti-armour and integral air defence weapons. Such a mechanised infantry combat vehicle will produce a viable force in the battlefield of 1980s to bring its full impact on the enemy both in armoured might and shock effect. It would finally retrieve the so called image of the otherwise decaying PB I. To regain her correct place into galaxy of arms if such infantry men have to don black berets it is worth the change! It is the mobility of mind that would matter in future and not the mobility in terms of tracks and motored vehicles. It is the calibre of head and not the colour and size of the beret which should really worry our planners.

"The Navy, the Air Force and Army work as a unit. If I had my way they would all be in the same uniform."

—General Dwight D Eisen-hower

INDIANISATION FOR THE CORPS OF ENGINEERS

MAJOR ON KARIR

THERE have been times when there were no 'Hindu' officers in the Army of 'Muslim' India,[1] and no 'Indian' officers in the Army of 'British' India. There were 251 Engineer officers in 1857, 363 in 1887 and only 70 in 1903, none of them Indians. By the turn of the Century, a mild cry for Indianisation was beginning to be voiced, and the First World War hastened the British Government to pay some heed to it. On 29 August 1917, a House of Commons announcement allowed British commissions to be granted for the first time to Indians at the Royal Military College, Sandhurst. The progress was so slow that even the moderates of the Indian National Congress saw in it a mere gimmick and raised their voice in the Legislative Assembly on 28 March 1921, pressing for twenty five per cent share of the King's Commissioned ranks in the Services, and for the establishment of an Indian Military College on the lines of Sandhurst. These questions were delved into by the Military Requirements Committee (1921), General Cobb's Scheme (1921), Shea Committee, and Committee on Indianisation of the Indian Army (1922). All these deliberations into the pros and cons resulted, firstly, in the Prince of Wales Royal Indian Military College being opened in Dehra Dun in 1922 for preliminary training of Indians to fit them to enter the Royal Military College, Sandhurst, and secondly, in eight units of cavalry and infantry being set apart in 1923 for complete Indianisation.

Though the Corps of Engineers remained cut off from the blessings of early Indianisation, an event of substance in the year 1923 was the creation of the post of Engineer-in-Chief, which pattern was later adopted in the UK. The Royal Engineer Officers during this year numbered 16 in Command and Staff appointments, 110 among Sappers and Miners, 171 in Military Engineers Services, 38 in the Survey of India, 50 in the Railway Department, 16 in Public Works Department, 4 in Mints, 5 Miscellaneous, and 6 Colonels and Lieut. Colonels on the unemployed list, in all 416 British officers.[2]

1. "Indian Army Through the Ages" by Lieutenant Colonal Gautam Sharma.
2. "Evolution of the Indian Army"—Printed in 1924.

The eight units scheme was given a good deal of drubbing by national opinion. It was "segregationist", said the patriots of the day. The Indian Sandhurst Committee or Skeen Committee was constituted in August 1925, and among other things, recommended the grant of commissions to Indians in the technical arms and services. Accordingly, vacancies were to be reserved at the Royal Military Academy, Woolwich, to help Indianise a few units of Engineers, Artillery and Signals.

Under this scheme, RE Aserappa, a young boy from Mysore, with father a Sinhalese and mother a British (the later condition perhaps particularly satisfying to the selectors of the day), entered Royal Military Academy, Woolwich, in 1930, and became King's Commissioned Indian Officer on 28 January 1932 in the rank of Second Lieutenant, making the first small dent in the personnel armamentarium of the day. Centuries of exclusivity came to an end, and the Corps of Indian Engineers took birth. Seven more KCIOs (LMH Wadia, CR Mangat Rai, Harkirat Singh, Partap Narain, RK Kochhar, MG Bewoor and AP Nanda[3]) joined the Corps by February 1934.

Meanwhile, under the growing tempo of nationalist demand, the Indian Military Academy was established at Dehra Dun in 1932. This had a "Woolwich Wing" where cadets showing an aptitude for mathematics and science could join, their numbers left to the discretion of the Commandant, there being no definite proportion of vacancies allotted to the Artillery, Engineers and Signals. In February 1935, Second Lieutenant NS Bhagat became the first Indian Commissioned Officer and the ninth Indian to join the Corps. He was followed by sixteen ICOs till the outbreak of the Second World War, among them being JS Dhillon, Mohammed Anwar Khan, JS Paintal, KN Dubey, DB Chopra, RA Loomba, PS Bhagat and Arjan Singh.[4]

The early ICOs, after completing their training at the Thomason Engineering College, were posted to one of the Indianised units (5, 15, 22 Field Companies) in command of a platoon, replacing a Viceroy Commissioned Officer and thus suffering some loss in prestige. This was partly in deference to the nationalist opinion which had considered the

3. Subsequent destiny of these officers was, respectively, as follows: first Indian Chief Engineer of Eastern Command, first Indian Commandant of the College of Military Engineering, second Indian E-in-C, Controller General Defence Production, Quarter Master General, First Regular Commissioned Indian officer to be killed in World War II, and first Indian Commandant of the Bombay Sappers.

4. Subsequent achievements of these officers were, respectively, as follows: Army Commander, E-in-C of Pakistan, Surveyor General of India, Master General of Ordnance, Divisional Commander, E-in-C, Army Commander, and Director General Border Roads.

existence of the VCOs as a hindrance to full Indianisation[5].

This increase in the number of Indian officers was, however, only one facet of the face of the Corps at that time, the other being the attitude of some British officers, with tradition as their mainstay, that these Indians were poaching on their preserves. These early Indian officers therefore found themselves in an atmosphere that is best recaptured in the words of Brigadier SN Dar narrated by him years later. Commissioned as an ICO in February 1937, he recounted : "We began to be accepted not without a few initial jolts. When we left our calling cards, we received no reply, while youngsters coming from the UK were invited for teas and dinners. We stopped calling. Soon, we were moved out of the RE mess on the plea that, as we were students of the Thomason College the College mess would provide us a more congenial atmosphere. Maintaining that we were officers first and students next, we started our own mess in a bungalow behind the double storeyed hostel. This, in fact, was the first Corps of Indian Engineers mess, and I became its first mess secretary. The E-in-C was scheduled to be honoured with a Regimental guest night in the Bengal Sappers RE mess and we were invited ! We refused to attend, maintaining that since we were not members of the RE mess, the E-in-C was most welcome to dine in our IE mess. Tony Bhagat said we would be delighted and honoured to have the E-in-C in our own mess, Major Harold Williams,[6] journeying to us on a cycle, implored, argued, cajoled, and we relented. Later, the Adjutant General and Military Secretary visited us ; matters were righted somewhat and the relationships improved. Looking back, however, I feel both sides were carried away—one by tradition, and the other by the fervour of Indianisation. The role of Major Williams as mediator and reconciler deserved commendation".

When the Second World War commenced in September 1939, there were no more than twenty five Indian officers in the Sappers and Miners—8 King's Commissioned Indian Officers and 17 Indian Commissioned Officers. Besides them, there was a sprinkling of Indians in the Army in India—Reserve of Officers (AIRO)—KC Khosla (of the Indian Stores Department), SK Bose (later Commandant CME), Basu and Hira Singh.

The Indian Military Academy continued to give regular commissions upto 1940, among the last of the war time regular ICOs being 2/Lt BN Das[7]. From June 1941, the Academy stopped granting regular commissions. The first of the Emergency Commissioned Officers from the Academy were B.P. Wadhera and JS Bawa.[8] The Emergency Commis-

5. "Expansion of the Armed Forces" by the Historical Section, Ministry of Defence.
6. Subsequently E-in-C.
7. Later E-in-C.
8. Later Director General Works and E-in-C respectively.

sioned Officers who began to fill the vacuum in troops and works appointments had either an engineering degree (with no ante-date benefits) or a science qualification. Such was the dire necessity that even a degree in mining was accepted. About this time, Officers Cadets Training Units (OCTUs) at Roorkee, Kirkee and Bangalore were poised in readiness to supply Emergency Commissioned Officers to the Corps, and some of the notable Indian Officers to join the Corps from this source were JR Samson, OP Datta, TB Nanda, SS Chhachhi, RM Rau, SN Sharma, PR Kumar and NB Grant[9]. But the expansions were enormous, and even the unremitting labours of the OCTUs were not enough to meet the ever swelling demands. In 1943, the year of peak expansions, the innovation of giving Direct Emergency Commissions had to be resorted to, both for the British as well as the Indian officers of the Corps. There were also contract service officers, such as DPR Cassad, who drew higher pay because of their high civilian status and emoluments. The Emergency Commissions in-put went on till October 1945, when the Indian Military Academy resumed regular Commissions.

The number of RE Officers coming to India in 1946 became a trickle and those going away a stream. The depleting officer strength in the Corps thus began to be a matter of serious concern and even alarm for Indian Engineer officers of the day. The smell of independence was much in the air, and with it the inevitable vacuum that would ensue with mass British exodus.

In September 1946, the Interim Government assumed office, and within a month took up earnestly the cause of nationalisation of the Armed Forces. Under the chairmanship of Mr. N Gopalaswamy Ayyengar, Armed Forces Nationalisation Committee was formed, and it immediately set about avidly seeking the views of Indian officers. A few sapper majors found themselves being asked to inject freshness and vitality into the Corps at a period of the most dramatic transition. Propelled by the urgency of the increasing deficiencies, Major RA Loomba, R.I.E. (later Lt General) recommended that Emergency Commissioned Officers be absorbed in the mainstream of the Corps of Engineers provided there was nothing contrary in their service records ; that as many as 30 officers be made available to the Corps from each batch being commissioned at the Indian Military Academy ; that the construction of the Indian National War Academy (later known as National Defence Academy) be hastened ; that serving JCOs and Indian ORs be given opportunity for Short Service Commissions ; that, in like manner, subordinate non-gazetted staff in the MES be given opportunity to acquire gazetted status

9. Later (respectively) : Chief Controller Research and Development, Director General Rehabilitation, DGW, Chief Engineers in Major General rank except Grant who became Chief Engineer in Brigadier rank.

in works units, thus releasing service officers for troop appointments. But, perhaps, Major Loomba's most far reaching recommendation was that engineer graduate students in universities be encouraged to join the Corps. They were to be compensated for their years in college by a suitable relaxation in age for entry into the IMA. Writing in the first issue of the Royal Indian Engineer Supplement of January[10] 1947, he went on to say : "The slow pace at which nationalisation of the Corps of Royal Indian Engineers is proceeding gives cause for alarm, and steps to increase this pace deserve serious consideration. What we need are more Indians who can replace British officers and we need them quickly".

What Major JS Dhillon's contributions to nationalisation of the Corps were may be narrated in the words of Lieut. General BM Kaul, then Secretary of the Ayyengar Committee : "In giving evidence before us, most Indians, with odd exceptions, dithered as they were not sure whether the British would go away from India soon or stay on. They played the British tune and said that the latter should remain in the Indian Army for some more years. They took this middle course to safeguard their own position. There were only a few Indians who said immediate nationalization was possible, eg Major (now Lieutenant General) JS Dhillon and Lieutenant Colonel (later Major General in the Pakistan Army) Akbar Khan, DSO. These two officers, with a fine record of service, expressed views before our Committee which were bold, logical and patriotic."

However, by the time Mr. Ayyengar submitted his report to the Interim Government in May 1947, it was overtaken by events and became out of date. Acceptance of Partition had become imminent. Nationalisation therefore, became not the main concern of 1947. Pre-war regular officers trained at Woolwich or at the Indian Military Academy, Dehra Dun, now became the corner stones of the Corps whose officers then totalled to about five hundred. Fully trained officers numbered only 14—at Cambridge 8, and at Roorkee 6. On their young shoulders were the future professional foundations and regimental traditions of the Corps to be built. The long draught of a widening vacuum at the top was soon to push them up to positions much beyond their experience and training and their number was acutely insufficient. Even by April 1947, the Corps had only some eighty five regular Royal Indian Engineers, among whom were no Major Generals, no Brigadiers, no Colonels. There were only 11 Lieutenant Colonels, some of whom had less than eight years service and filled posts that were normally held after twenty years experience. The story at Major and Captain levels was no different. Nonetheless, even though raised onto positions much beyond their experience and training, these Indian officers continued to receive approbation from successive E-in-Cs of

10. This was the forerunner of the Journal of the Institution of Military Engineers.

pre-Independence India. Major General WF Hasted, the last E-in-C of British India, said in the Royal Indian Engineers Supplement : "The Royal Engineers by their influence and work have contributed much in the past towards the development of India. They have a proud record filled with many traditional examples of high purpose and successful endeavour for succeeding generations of Engineers to follow. These records and these traditions now pass to the RIE as a foundation on which to build. That they will build worthily I have no doubt". Major General C de L. Gaussen, the first and the last E-in-C serving in Field Marshal Auchinleck's Supreme HQ said : "The pride of young British officers in their respective Sappers and Miners Groups was intense. They worked hard at the language and took immense trouble to understand their men as well as mastering technical skills. Even more striking were the King's Commissioned Indian Officers".

The day of independence found the Corps with Indian and British officers among whom 2/Lt JS[11] Soin was the junior most Indian. There were also 12 British Other Ranks in Survey. Major General JFD Steedman became the first E-in-C of Independent India. A question that now began to take the hue of much import was : "Who is going to be the next E-in-C and how should the important posts in the Corps be filled"? How this was steered to an answer is best narrated in the words of Major General Harkirat Singh : "Aserappa, Mangat Rai, Wadia, Kochhar, Dhillon, Nanda and myself got around a table and decided among ourselves who would hold which senior appointment. We agreed that Aserappa who was already the CES—Colonel Engineer Staff—should become the Brigadier Engineer Staff, that Chief Engineers of Western, Eastern and Southern Commands should be Mangat Rai, Wadia and myself, and that Centre Commandants should be Kochhar, Dhillon and Nanda. By a concensus, we also decided that our next E-in-C must be Bill Williams. We informed Steedman about it, and senior Indian officers at Army Headquarters agreed with us." Such were the times : By 1948, Indian Sapper officers had taken charge of all these pivotal appointments.

However, it would have been premature to dislodge all the senior British officers from the Corps too quickly. British coping stones were still required with Indian corner-stones. The posts of E-in-C, Director of Works, and Commandant of the School of Military Engineering continued to be filled by British officers, along with a few others at the Centres and SME.

Nonetheless, against all British predictions that the Corps would not be able to stand on its Indian feet for another sixty years (as narrated by Generals Aserappa and Dhillon), Mass British exodus resulted in landmark achievements for Indian Sapper Officers in the decade following Independence. Propelled by the fervour of freedom, they were well orientated

11. Later Director General Border Roads.

towards assuming high responsible positions. Narrates Lieutenant General RA Loomba, PVSM : "Had India accepted Dominion Status, the British would have stayed on, and in the normal course, I would have become a Colonel in 1958 or so : whereas, under the changed circumstances, I found myself a Colonel 10 years earlier, and so, set about commanding the Madras Sappers in 1948". The sweep of luck upon several others was equally exhilirating. But even though admitted to high offices ahead of time, these officers, hardy pioneers of the period, trained in the cauldron of a World War, soon became efficient problem solvers, determined to do things better than the British had ever done ! A measure of the validity of this determination and enthusiasm are the 1953 words of Major General Harold Williams : "Have we made many mistakes about the quick promotions to the rank of Colonels ? Perhaps one or two, certainly no more. Of the 25 senior appointments, no less than 20 are original regular officers", about whom, the E-in-C was, by implication, decidedly very happy.

In lower ranks, officer shortages continued to dog the heels of the Corps. That is another major thread of the personnel story of the late 1940's and early 1950's. Taking recourse to some of the desperate measure of the World War and waiving long standing policies, 90 JCOs were overnight made officers by the three Centre Commandants, British as well as Indian. The first graduate entry course (comprising OP Narula) RK Kalra, Gobinder Singh, HR Gopal[12] and others) was commissioned from the IMA in 1948. Also, Temporary Commissions in 1948 and Short Service Regular Commissions in 1949 were started, with Brigadier RK Kochhar commanding the OTS at Deccan College, Poona. Some of the officers to enter the Corps in this way were KB Seth, VSM Sharma, Harish Chandra, Ayyengar, and AN Sethi.[13] In another bid to enlarge the area of intake, Special List Commissions were started in 1953, and cadres of Technical Equipment Officers, Inspectors of Engineer Machinery, Quartermasters and Record Officers (the last two categories on the general roster of the Army), made their advent in the Corps. The same year, units of the Corps began to be commanded by the post war regular commissioned officers. After Independence, the standard of langars, welfare centres, recreation rooms, and other living conditions improved beyond recognition.

Another feature of these years was the presence of senior sapper officers as students at the Inter Services Staff College, Wellington, among

12. Subsequently Narula became a Director in the Ministry of Shipping and Transport, Gopal built the Air Force Academy, and Kalra directed Air Force Works in 1971 operations.

13. In later years, Seth became Director of Utilities, Sharma represented India in a Bridge Olympiad, Harish Chandra became Director Designs, Ayyengar was captured by the Chinese on the Aksaichin road, and Sethi praticipated in prestigious Naval dockyard construction at Bombay and Port Blair.

whom may be mentioned Colonel Shamsher Singh, Lieutenant Colonels OM Mani, Naresh Prasad, KJ Sahaney, and JVP Braganza.[14] A number of officers did courses abroad, while the Technical Staff Officers[15] commenced their training at the Institute of Armament Studies on the SME Campus at Kirkee.

The tenure of the last British Sapper Officer coursed to its end. The first officially recorded British Military Enigneer of the East India Company was Colonel Herman Bake, appointed in Bombay in 1671. The last of the line was Major General Sir Harold Williams, who served the Corps till 1955. Thus, after 184 years, the era of British military engineers association with India came to a close. But with a difference. While the first military engineer helped to consolidate the unbridled persuit of wealth by the trading Company he served, ironically, the last helped to consolidate the gains of Independence. He assumes interest to this history in 1933 when he donned the mantle of a Professor of Civil Engineering at the Thomason Engineering College, Roorkee, with the specific charge of Indian Commissioned Engineer Officers. Knowing the ICOs intimately became the sine-qua-non of Bill Williams' tenure here, and this was to prove invaluable in the coming years. Later he moved to France where he became the first Commander Royal Engineers of an Armoured Division. From June 1943 to August 1944, he was Chief Engineer IV Corps and guided its engineering affairs during a period of desperate struggle in upper Burma. Subsequently, he was appointed Commandant of the School of Military Engineering, Brigadier Engineer Staff E-in-C's Headquarters, Chief Engineer Southern Command, Poona, and on 1 January 1948, then a Major General, he became the second British E-in-C of Independent India. In 1951, he became Colonel Commandant of the Corps.

He had levelled all imperialistic walls around himself, had steered well the Corps in the early days of Independence, and so he was asked to stay on which he did, ultimately retiring in 1955. He handed over charge to Major General RE Aserappa, the first Indian E-in-C, on 15 October 1955. The Government conferred on Williams the honorary rank of Lieutenant General and he continued to be the Colonel Commandant till 1958.

Lieutenant General Sir Harold Williams was in love with India. He kept returning to this country to tap mental and spiritual nourishment to the very end, till, on the soil he loved so much, he breathed his last on

14. Later, Shamsher built the Tank Factory, Mani became Chairman of Bharat Earth Movers Ltd, Naresh built the Chandigarh cantonment, Sahaney built the Vehicles Factory, and Braganza helped during the Panshet Dam disaster.
15. Originator of the concept of TSO was Brigadier JS Dhillon as Director Technical Development.

17 October 1971 at Mussoorie, at the age of 74. He was burried with full military honours by the Bengal Group, and his last remains lie on the place from where he had charted upon his long and distinguished career in 1918. In the words of the well known All India Radio announcer, Melville de Mellow, who was one of his students at the IMA in 1933 : "Roorkee was his 'Shantiniketan' and his 'Sewagram'.

The British connection with the Corps had finally come to a close. However, in England, Royal Engineer officers of Madras, Bengal and Bombay 'Sappers and Miners' continued to gather in their respective Associations for annual dinners. For these ex-officers of the Corps, these were ralleys of deeply cherished sentiments for their Centres, and of savouring the romance of a past that had been for them the embodiment of so much colour. A feature of these gatherings was the exchange of messages between the Indian Engineers and the Royal Engineers, one of the most notable on record being the one in 1953 between Colonel P.S. Bhagat, VC, Commandant of Bombay Engineer Group, and General Frank Simpson. For the very warm sentiments which Colonel Bhagat expressed, General Simpson replied : "I wish I could describe to you adequately how much what you said was appreciated by everybody present. You could not have expressed your feelings in a nicer or more sincere way and it moved the whole gathering. Many officers came up to me afterwards and asked me to let you know how much they had enjoyed hearing the sentiments which you had expressed in your message. I would like to add my own personal thanks, not only for those sentiments, but also for the privilege I had in being able to read them to everybody else. I feel very proud in having been asked to take over the Presidency of the Association".

Major General RE Aserappa became the first Indian E-in-C on 16 October 1955. The Corps of Engineers was at last fully Indianised.

FOLKLORE OF NEPAL

P C Roy Chaudhury

THE folkstories of Nepal are intensely human and arise out of the elemental sentiments and passions of men influenced by religion and society. The folkstories are of different types. There are tales of heroism where the boy orphaned by a powerful enemy takes revenge when he grows up. The military element in the Nepali boy appreciates this element. There are stories of romantic and pastoral love where the pair meet in the meadows and ravines and are true to each other through trials and sorrows. There are the usual stories of the cunning tricksters with a fling on the foreign *Banivas* (traders) and the stories of the foolish. Here the Nepalese do not mind being depicted as rather credulous and unsophisticated. The animal stories show the cunning of the jackal, the magnanimity of the elephants and the sacredness of the rhinoes. The common man in Nepal is very poor and there are the natural folktales of the poor aspiring to be rich and have a ride on the elephant or possess a mansion. The wandering religious mendicants are another source of the folktales. The religiosity of the Nepalese, their childlike faith in Lord Pashupati Nath, Parvati and Vishnu, their dread of the fierce and malevolent Gods and Goddesses are reflected in many of their folktales.

Three regions of India, namely, Bihar, Kashmir and Assam have influenced the Napalese folktales. One is struck by a large number of folktales which are common to Bihar and Nepal. The story of the origin of the *Karma* festival is current among the aboriginals that have migrated from Bihar to Nepal centuries before. The story of the origin of Sabai and other grass from which paper is made is common to Bihar and Nepal. We have heard local versions in Nepal of the folktales of Saranga and Sada Birij, Raja Nigas, Allaha and Rudal so common in Bihar. This is no wonder as these folktales are common in Champaran district of Bihar contiguous to Nepal. These stories are also common in Uttar Pradesh which adjoins Nepal. The Nepalese folktale of Chaturai is heard in a slightly different version in Uttar Pradesh. In this story we are told how an ogre had killed six brothers and their sons. The wife of the seventh brother who was also killed was at her father's place as she was carrying a child. A son was born who grew to be a fine lad and with a strong physique. His companions twitted him as he had no father and no home and was brought up in his maternal uncle's place. The boy pestered the mother and came to know of the ogre who had taken possession

of their ancestral house after killing his father and uncles, their wives and the children. He would not listen to the mother and went way. He called on the ogre who was very pleased that the boy had come as he would feast on him. The boy asked him to wait for sometime so that he could put on more weight for a more satisfying meal. The ogre agreed and the boy lived in the ogre's place (their original home). The ogre will disappear every day and once the boy querried and was told he had to attend the *Durbar* of the God. The boy asked the ogre to find out from the God what was his span of life. The ogre returned and told the boy his span of life was one hundred years, neither less nor more. The ogre did not realise the implication. After some time the boy found the ogre sharpening his knife. The boy asked him why was he doing so and the ogre said he could not wait anymore and must eat the boy. The boy laughed and reminded the ogre what the God had said. The ogre was stupefied and restored all his uncles and aunties and cousins to life and left the house. The boy brought his mother back and came to be known as the Chaturai or the clever boy.

The stories of Daksha Prajapati are common in Nepal, Bihar and Uttar Pradesh. The Nepalese folktale of Bira a brave girl who had donned male attire and fought a rival king and defeated him and was ultimately married to him in *Swavamber* speaks of the heroic valour of Nepalese women and has its counterpart in the neighbouring tracts of India. Nepal if full of folktales of valour and the undying faith in Gods Gorakhnath and Pashupati Nath.

We will make a brief reference to the influence of Kashmir on the folktales of Nepal. The story of the trickster who would borrow utensils and return the double number and after inspiring confidence in the neighbours would borrow all the utensils of the neighbours and disappear is common to Kashmir and Nepal. The story of Himal and Nagrai has its different versions in Nepal and Kashmir. Folktales underlining the importance and the prestige of the Brahmins and the preists are common to Kashmir and Nepal. Stories of Kings becoming followers of *Rishis* are common to Nepal and Kashmir.

Assam folktales also have their counterpart in Nepal. There have been cultural exchanges between Assam and Nepal. The commonly accepted story of the origin of Kamaksya Devi near Gauhati has its echo in similar folktales regarding some goddesses of Nepal. Beating of drums to inform the villagers to assemble for some communal feasts or common troubles feature both in Assam and Nepalese folktales. Among the Garos of Assam a *Nagara* (a huge drum) is usually kept hanging by the backdoor of the house. This is also a common feature in some of the clans of the Nepalese. The torrential and resplendent water-falls have folktales associated with some goddess who has to be propitiated by offerings and

it is commonly taken that human sacrifices are to be occasionally offered. There are similar stories in Nepal also and malignant Devis connected with lakes or waterfalls have to be appeased with offerings. Even as late as the inception of British rule the Garos in Assam used to indulge in human sacrifice to their gods. There is no end of similar folktales in Nepal. Hills and mountains in Assam and Nepal have their presiding deities who are either benevolent or malevolent. Revival of the dead is another common feature of the folktales in two regions both of which have a high incidence of belief in superstitions and traditions. A broom-stick at the door is taken to be a bad omen in both the regions.

BOOK REVIEWS

THE SEARCH FOR PEACE

by DW BOWETT

(Published by Routledge & Kegan Paul, London, 1972) pp 236 Price £2.50

HISTORY has shown that man is an aggressive animal encroaching thoughtlessly and viciously on plant and animal kingdoms as well as on the environment generally. Having succeeded in the fight for survival against other species, man has increasingly turned against his own species. In all forms of society that man has so far created, conflicts of interest have remained. These often have led to wars and violence. With man's progressively increasing technological capability warfare is correspondingly becoming more and more destructive and dangerous not only for man himself but equally for the earth's hospitable environment in its totality. In order that warfare is banned and conflicts between countries, societies and people are resolved peacefully, increasing and universal awareness of what is at stake is necessary so that a quantitative change comes about in man's attitude towards violence and war and wars whether by accident or by design are avoided. But man's performance all these years provides no grounds for hope that attitudinal changes of this dimension, particularly in the case of leaders of powerful nations, will come about quickly. After all, the most furious and brutal forms of war have been waged in the name of God or country by men who otherwise may not deserve to be called bloodthirsty.

Yet there is no inevitability about war. But because the necessary attitudinal changes among the elite and the creation of organisational structures which can effectively prevent war take time to come about, this volume is appropriately directed at the Youth of the World.

Within countries, the rule of law generally prevails---but unfortunately not universally---so that conflicts between individuals or groups can be resolved following the processes of law rather than by resorting to violence.

In the international arena, however, although attempts have been made to establish some form of order, especially after the First World War, war itself has not been outlawed. In the covenant of the League of Nations founded in 1919, member countries undertook to respect the territorial integrity and existing political independence of all Members of the League.

The biggest drawback was that not all countries were its members. United States stayed out. Central European Powers, who lost the First World War were discriminated against in several ways by the victorious Allied Powers. Equally important, more than half the world's population living in Asia and Africa were in varying stages of bondage under one

or other of the victorious Allied Powers. Thus the League's covenant by enjoining its members to guarantee the territorial integrity and existing political independence of all Member States, sought to deny, for ever, freedom to people under colonial domination.

Some attempts, however, were made by high minded people to reduce the chances of war in a world dominated by Powers endeavouring to preserve their colonies and pre-eminance in the control of the world's resources and of other powers who were either deprived of their colonies or were endeavouring to find a place under the sun. The Kellog-Briand Pact of 1928 on the renunciation of war as an instrument of national policy is an instance in point.

Despite pacts and the desire of strong powers to maintain the status-quo, the Thirties witnessed aggressions against weak nations by one or other industrial powers. Thus Italy invaded Ethiopia and succeeded in annexing that country; whole Japan encroached on China in Manchuria. Later, Hitler annexed Czecho-slovakia and Austria by the threat of the use of force and finally delivered his ultimatum to Poland unleashing World War II.

Immediately after the end of World War II, Great Powers because more receptive to the idea of evolving an International Organisation which may avoid the mistakes of the League of Nations and, hopefully, succeed in preventing wars—at least major wars involving the Great Powers. In many respects United Nations brought into being following realisation among the industrialised and affluent people of the world of the need to learn to live together, has functioned more successfully than the ill-fated League of nations. Yet, it is by its very structure, an inffective instrument for ensuring world peace in a situation where countries—big or small, taking advantage of the conflicting interests of Great Powers and with or without the tacit backing of one of them, choose to carry out limited wars of aggression against a weak neighbour. Nor could it do much to enable colonial people to gain independence and oppressed majorities to secure their just rights or shake off the yoke of tyrannical majorities.

Post war developments in the international jungle give little cause for the comfort of militarily weak and peaceful nations and of politically or economically oppressed people.

One need only cite the example of Korea, Vietnam, the four Arab-Israeli wars, the five Pakistani aggressions and Chinese aggression against India, the troubles in Czecho-slovakia and Hungary, the Cyprus affair, the struggles of the people of Southern Africa in Angola, Mozambique and now in Zimbabwe and South Africa itself and the strife in Lebanon, in support of this thesis.

As the founders of the League of nations had recognised, it is

important that the world's statesmen should endeavour to eliminate the causes of war if humanity is to be spared the scourge of recurring wars. This is of the utmost importance since the world has always been subjected to war including civil war in some parts of the world.

However, it has not yet been recognised that all nations have the responsibility for ensuring that the legitimate rights of all are protected and it would be in proportion to their political, economic and military power. Strong nations have an obligation to act with restraint. Until the lesser ones stand united, they will have little leverage to persuade the more powerful ones to act in moderation and respect others' rights.

The need for this is particularly great in view of the feverish arms race, with the Super Powers arming themselves to the teeth and trying to maintain a precarious and uneasy balance of terror, and while thus warding off all out nuclear war to endeavour to extend their "spheres of influence" over the unfortunate Third World by arms diffusion, initiating proxy wars, economic coercion and sundry other devices.

Some efforts at nuclear disarmament are being made by the Big Two but cynically, the stress is on "arms control" and not on disarmament.

It is in this general context that one has to examine man's need for evolving a regime in which international peace and security may be assured.

Bowett's compact volume on "The Search for Peace" deals with all relevant issues in a lucid style. Although this book in the World Studies Series was meant for Sixth form students, Colleges of Education and Universities, a wider circle of readers would also benefit by studying this very informative publication.

RRR

BRITISH CUT AND THRUST WEAPONS
by JOHN WILKINSON-LATHAM
(Published by David & Charles: Newton Abbot, 1971) pp 112 Price £2.75

SWORDSMANSHIP is a dying, if not a dead art. This was inevitable since the sword and associated personal weapons such as the lance and spear, long ago gave way to weapons based on the growing chemical and metallurgical technologies, which provide longer reach and higher lethality, besides conferring on the user, relative immunity because of this longer reach.

Yet in the long history of warfare, till the chemistry of explosives and the technology of fabricating metallic alloys with higher strength

and resistance to corrosion spread, and soldiers and sailors came to be armed with muskets and guns, the sword, spear and lance dominated the battlefield. These, especially the sword was the personal weapon par excellence and agility and dexterity in weilding a sword, good swordsmanship, in short, determined the chances of survival of a soldier whether on the battlefield or in a duelling match, duels being considered the proper way to settle issues involving honour in medieval European society. Hence, swords as personal weapons were carried not only by soldiers but by other well dressed gentlemen as well.

Swordsmiths flourished in Germany, France, which under Louis XIV produced excellent swordsmen, and Spain. By trial and error and by selecting proper iron ores, the swordsmiths of Toledo were able to forge and temper sword blades into admirable instruments. So highly were they prized that noblemen in European countries besides Spain, sought to acquire swords forged and built by the smiths of Toledo.

It would seem that the art of sword making travelled to England from the Continent even before the onset of the Industrial Revolution.

The sword as personal weapon (although still retained for ceremonial use) was replaced by firearms from the British and Indian armies at least since the beginning of the century. As described by Churchill, the last occasion on which British troops used swords, sabres and lances was at Omdurman.

Although seemingly simple, the sword is by no means that. It has at least 23 important components in the manufacture of each of which, considerable skill and care is needed. When all the components are assembled, the finished product must be a well balanced instrument which can be weilded without undue strain. Further, the blade must be well tempered and springy, yet not too springy since the weapon must recover its original shape, regaining its strength and not flutter, bend or break on striking a shield. Then there is the all important art of fashioning the 'point' or tip of the sword correctly.

Lest the importance of correctly designing and fabricating a sword is underestimated, it may be mentioned that British officers of previous centuries who had to use swords on the battlefield not infrequently complained about the quality of their weapons—as officers of all armies do today about the weapons they and their men have to handle.

Also in peacetime, in days gone by, when commanding officers had to buy weapons for their men from the funds received for the upkeep of their regiments, the principal target for economy appeared to be swords for the men !

As for thoroughness of staff duties, it would seem that officers of a certain regiment were ordered, on mobilisation in 1939, to deliver their

swords to the Regimental Armourer so that blades could be sharpened in accordance with mobilisation orders—although the British Army had officially discarded the use of swords in battle as from 1915.

In England, the firm John Wilkinson-Latham have been justly famous as the makers of quality swords and sabres. Their publication under review gives an excellent 'resume' of the types of swords, sabres, lances and bayonets with which famous British regiments were armed and includes besides pictorial illustrations of the weapons described a brief description of the processes used in fabricating swords.

The illustrations and printing, in keeping with the tradition of such publications, are excellent, and the volume deserves a place in regimental libraries.

RRR

SEPARATISM AMONG INDIAN MUSLIMS

by FRANCIS ROBINSON

(Published by Cambridge University Press, London, 1974) pp 468 Price £9

IN this very informative and scholarly work Francis Robinson has endeavoured, with success, to critically examine the general political conditions obtaining in the sub-continent since the end of the Mutiny to the ushering in of the Montague-Chelmsford Reforms. The conflicting interests of the Ruling Power and Indian nationalism on the one hand and of inter communal, inter provincial groups among Indians on the other are inevitably the central core around which the theme has to be studied. It is difficult for an individual from the sub-continent or any one connected with events here, to be entirely objective.

It is to Robinson's credit that he has indeed been as objective as is possible both in the selection of source material as well as in his interpretation of events which he has mentioned.

Following the mutiny, British rulers were extremely suspicious of the intentions of the muslim element within the country. This, however, was only partly true.

For example, Lawrence a key figure in quelling the mutiny, supported muslims of the Punjab as a matter of policy. Likewise in the Deccan, muslims in the view of British administrators were useful counterweights against the Mahrattas. In Bengal and UP, however, where upper class muslims had till then ruled the roost, assumption of all political and economic power by the British had resulted in the 'Ashrafi' being deprived of the monopoly of power and privilege that they had come to regard as their right, resentment against the new order was considerable.

Additionally, the submissive Hindu was quickly taking advantage of educational facilities being set up by the new Rulers and in consequence was becoming better fitted to hold Government appointments, which in India provided status and opportunities for graft as well as for extending patronage.

Before the British consolidated their hold on the country, most of the land had been appropriated by the Urdu speaking elite and court positions were their monopoly. As this came to be eroded by the new policy of the British which demanded of 'native' officials, a working knowledge of English, the Ashrafi quickly perceived the threat to their position as the most dominant group in the country. It was in order to maintain their special position, that muslim elite in UP raised the bogey of Islam in danger, whenever it suited them and formed the hard core of the Muslim League of Pre-partition India.

Among British administrators, some at least saw in Muslim separatism, a useful political instrument for prolonging their rule in India. This policy ultimately paved the way for the partition of the sub continent. Initially, however, not all British administrators were keen that Muslim elite in India should get privileges far in excess of what they could legitimately claim. Immediately after the Mutiny, Muslims were suspected-possibly even feared—because of their propensity to raise the cry of Islam in danger and call for Jehad against infidels whenever it seemed to serve the interests of corrupt politicians. As Robinson has noted, in sub-continental policies in Pre-Independence India. "Islam was to the Muslim Press what sex is to the Western Press". This was certainly so to the new class of professional politicians such as Mahomed Ali, Shaukat Ali and some others.

They utilised the Khilafat issue to embarrass the British. But raising funds for a cause, they found, was indeed an excellent and lucrative pre-occupation. Embezzlement and misappropriation of funds were the norms of religious, educational or political organisations controlled by the new breed of professional politician. Nor were principles and laws sacrosanct. As Mahomed Ali himself declared, "Constitutions, like pretty women, are made to be violated".

To say this was not to suggest that those who organised and worked for Muslim separatism were not loyal to their faith. Most of them certainly were and quite a few, perhaps, understood and interpreted loyalty to Islam to mean fanatical hatred for those professing other faiths. This has been India's tragedy.

A point well brought out by Robinson is that muslim communalism was not a re-action to communalism of the majority of India's population, but rather the reverse.

A very useful contribution to the understanding of communal politics in India which merits serious study by students of South Asian Affairs.

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Crone, GR	The Discovery of America. 1969
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SECRETARY'S NOTES

ANNUAL SUBSCRIPTION

I would like to thank all those members who paid their subscription so promptly at the beginning of the year.

To those of you who have not yet paid, may I remind you that your subscription was due on the 1st January. Would you please, therefore, put a cheque in the post to me today. There are some members who have also to pay their subscription for 1975. They are requested to make the payment for both the years to avoid unnecessary reminders.

Whereas the subscription was revised from Rs 10/- to Rs 15/- wef 1 January, 1975, I continue to receive credit of Rs 10/- from a large number of officers through their Banks, even though I have reminded them individually on more than one occasion. The number of such subscribers is over 500. You can thus see the total annual loss to the Institution which it can ill afford. Even though I am trying once again to remind each individual officer, I shall be grateful if the Banks are advised, under intimation to me, to send Rs 15/- as subscription in future and also to clear the arrears.

Further, in a number of cases the Banks send the credit without indicating the name of the officer and I do not know in whose name the money is to be credited. This sometimes results in stoppage of the Journal. It shall help me a lot in serving you better if the Banks are also advised to indicate your name and membership number, if possible, when crediting the amount.

LETTERS TO THE EDITOR

We wish to develop this feature in the Journal, so if there is any point in its pages on which you feel you would like to send me a letter for publication, do please send it along. It might be a letter of commendation on an article, or you might disagree with the conclusion of a writer. Whatever it is, send in your letter and I will endeavour to get it in. Letters should be as brief as possible and should be sent to the Editor, USI Journal.

ADDRESSES

The difficulties of tracing addresses are now very much increased. Members are earnestly requested to keep the Secretary informed of

changes in their addresses or if possible give a permanent address which will always find them, e.g., a bank.

NEW MEMBERS

From 1st October to 31st December, 1976 the following new members joined the Institution :—

AGGARWAL, Sqn Ldr S.
AHUJA, Captain B.S.
AMARJIT SIHOTA, Captain
ARUN SAHGAL, Captain
BAHL, Captain S.K.
BAIDWAN, Major D.S.
BALASUBRAMANIAN, Lieut M.I.
BANSAL, Captain ALOK
BASITH, Major A.A.
BASWAN, Captain G.S.
BEDI, Captain M.S.
BEDI, Captain S.K.
BHAGAT, Major M.P.
BHANDARI, Captain G.S.
BHANDARI, Captain R.S.
BHATNAGAR, Captain G.N.
BHONSLE, Captain S.P.
CHARANJIT SINGH, Captain
CHARAN SINGH SAINI, Shri
CHHIB, Captain U.C.
BHADWAL, Captain H.S.
DOGRA, Captain N.K.
GILL, Lieut J.S.
HITKARAN, Flt Lt
INDER SETHI, Brigadier
JAGDEV SINGH, Captain
JAIN, Major R.K.
JASPAL SINGH, Captain
KARTAR SINGH, Captain
KHATI, Captain P.C.S., Vr.C
MAHIJEET SINGH, Lieut
MAJUMDAR, 2/Lieut K.
MANI, Captain V.N.
MENON, 2/Lieut K.G.
MITTAL, Captain V.A.
NARENDRA SINGH, Captain
NAROOLA, Captain VIJAY
NIRMAL SINGH, Captain
POTLURI, Lieut Shaw
PRABHU, Captain K.S.
PRABHU MIRASHI, Flt Lt
PRATAP SINGH, Major
RAGHUBIR SINGH, Captain
RAJA, Major V.K.A.
RAM KUMAR, Captain T.
RAO, 2/Lieut K.S.
RATH, Sqn Ldr S.N.
RAVINDER IQBAL SINGH, Major
SANDHU, Captain J.S.
SANDHU, Captain R.S.
SANDHU, Lieut Col R.S.
SANGHA, Captain B.S.
SHAHBAZ SINGH, Captain
SHARMA, 2/Lieut A.K.
SHARMA, Captain K.G.
SHARMA, Captain L.M.
SHARMA, Major S.K.
SHARMA, Major S.P.
SHINDE, Captain V.B.
SHISHPAL SINGH, Captain
SINGH, 2/Lieut A.K. (Life)
SINGH, Captain J.K.
SOLANKI, 2/Lieut T.S.
SRIDHARAN, Captain V.
SURI, Captain J.P.S.
YADAV, Major B.S. (Life)

U S I

(Established : 1870)

OUR ACTIVITIES

Library Service

ONE of the oldest and finest military libraries in India, today it has over 17,000 books, some of them dating back to 16th and 17th centuries. The Library continues to supply books to members outside Delhi by paying postage one way--a unique service which U.S.I. is proud to render in the cause of promoting the study of Military Art, Science and Literature.

Correspondence Courses

THE introduction of correspondence Courses for promotion and Defence Service Staff College examinations some years ago found ready response and today the institution has 1,200 members who participate in the Training Courses. Material is despatched to them regularly, wherever they may be.

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

USI Journal

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

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

Gold Medal Essay Competitions

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

Lectures and Discussions

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

MacGregor Medal

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

Rules of Membership

1. All officers of the Defence Services and all gazetted officials shall be entitled to become members, without ballot, on payment of the entrance fee and subscription.

Other gentlemen may become members if proposed and seconded by a member of the Institution and approved by the Council. They will be entitled to all privileges of membership except voting.

2. Life Members of the Institution shall be admitted on payment of Rs. 270/- which sum includes entrance fee.

3. Ordinary Members of the Institution shall be admitted on payment of an entrance fee of Rs. 20/- on joining and an annual subscription of Rs. 15/- **to be paid in advance.**

For further particulars, write to Secretary, USI, 'Kashmir House', King George's Avenue, New Delhi-110011.

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