

## **PART III**

### **CHAPTER 6**

## **LOGISTICS**



**SECTION 17 : FUNCTION, PRINCIPLES AND  
LOGISTIC SUPPORT SYSTEMS**

**SECTION 18 : FUTURE TRENDS IN LOGISTICS**

## **SECTION 17 : FUNCTIONS, PRINCIPLES AND LOGISTIC SUPPORT SYSTEMS**

***“Mobility is the true test of a supply system”.***

**– B.H. Liddell Hart, *Thoughts on War*, 1944.**

6.1 The territorial vastness and the geographical diversity of our country preclude application of a standard logistic template. The road and rail communications infrastructure in border areas is under-developed and availability of local resources is largely inadequate. Thus, inter and intra -theatre moves are time-consuming and switching of logistic resources is difficult to execute. From the operational point of view, such conditions call for adequate stocks to be maintained at the theatre and sector levels to undertake operations at short notice.

6.2 Our logistic support system ensures that each theatre of operation is self-contained and self-sustaining for the initial phases. In the long term there is a need to integrate the logistic resources of the three Services and utilise the existing national infrastructure more profitably to economise on overall effort.

### **Relationship between Strategy, Logistics and Operational Plans**

6.3 Logistics is a command function and is the lifeline of an operational plan. No operational plan can succeed without a sound logistic plan and commanders must view operations and logistics as being inter-dependent. The three major responsibilities of a military high command are to create, support and employ combat forces. Therefore all major military decisions need a blend of strategy and logistics which are inseparable.

6.4 Logistics govern the fundamental relationship between strategy, military capability, scope and timing of operations. The composition, balance and deployment of forces, along with the rate of build up, are all determined by the complex inter-relationship between strategic, logistic and technical considerations. In the course of an operation adequate logistic support must be ensured to sustain and re-generate combat power so that the assigned operational and strategic objectives are effectively accomplished in time.

6.5 The relationship between strategy, logistics and operational plans may be expressed as follows: -

- Strategy determines the required level of military capability.
- Logistics sustain the military capability.
- Operational plans exploit military and logistic capability.

6.6 The relationship between the levels of war and logistic support is given below: -

- **Strategic Level.** Involves national strategic security objectives and use of national resources to accomplish these objectives and encompasses the industrial base, mobilisation, strategic lift (air and sea), capabilities, procurement, material readiness, strategic stockpiles and re-generation.
- **Operational Level.** Links the employment of forces to strategic objectives and includes reception, staging, sustainment, re-deployment, theatre distribution, intermediate intra-theatre airlift and reconstitution.
- **Tactical Level.** Deals with the employment and manoeuvre of units in relation to the enemy in order to use their full potential and involves arming, manning, feeding, transporting and sustaining soldiers.

### **Principles of Logistics**

6.7 Logistic planning must be simple and responsive to the needs of the operational situation. It should be based on the principles outlined below:-

- **Foresight.** It is the ability to foresee operational requirements and involves identifying, stocking and maintaining the minimum resources and capabilities necessary to meet logistic requirements.
- **Simplicity.** Simplicity implies avoiding complexity in both planning and executing logistic operations.
- **Flexibility.** This is the ability to adapt logistic structures and procedures to changing situations and operational plans.
- **Economy.** Providing the most efficient support to accomplish the mission exemplifies economy. Commanders must aim to achieve economy by prioritising and allocating resources.
- **Coordination.** This implies exploiting, synchronizing and coordinating logistic resources and infrastructure at the national and inter-Service levels.
- **Protection.** Logistic installations are vulnerable to long range and precision-guided weapons. Survivability can be enhanced by decentralized logistics, limiting logistic assets in forward area and dispersing them widely.

### **Logistic Support System**

6.8 The basic tenet of logistic philosophy is that the logistic support system must be responsive to the operational needs of the commander. As a philosophy, defence logistic development should be integrated with the national infrastructure and national development plans. It should determine the broad framework for the

country's development of logistic infrastructure to meet national objectives. The basic aim should be to ensure optimum utilisation of national resources, industrial mobilisation and achieve cost-effectiveness.

6.9 A joint approach in inter-Service logistics is essential to ensure economy. A centralised agency is required for higher direction, control and coordination of the logistic effort amongst the three Services and to provide an interface between Service Headquarters and other government and non-government agencies. Concurrently there is a need to optimally utilise the considerable infrastructure of the private sector, trade and local resources to enhance the military logistic capability.

6.10 An efficient logistic structure contributes greatly towards meeting the requirements of the field force. This is particularly relevant in the context of the Indian Army which is deployed over a vast geographical spread in varied terrain and climatic conditions. Catering to its requirements in such an environment demands the following from the logistic infrastructure :-

- A streamlined chain with lean organisations to eliminate multiplicity and repeated handling and thereby increase the velocity of logistic support.
- A 'sense and respond' system working on the 'push' model to increase user satisfaction.
- An efficient inventory management system to reduce excessive stocks. In this regard, procurement of commercially off-the-shelf equipment is a viable alternative.
- Quick and effective casualty evacuation and management. In addition, existing civil medical facilities should be optimally utilised.
- Rapid recovery and re-deployment of scarce logistic resources during various phases of operations.
- Specially tailored units for theatre-specific logistic requirements.

***“For want of a nail, the shoe was lost;  
For want of the shoe, the horse was lost;  
For want of the horse, the rider was lost;  
For want of the rider, the battle was lost”.***

**– Benjamin Franklin, *Poor Richard's Almanac*.**

## **SECTION 18 : FUTURE TRENDS IN LOGISTICS**

***“The success of war depends to a considerable extent on the logistics back-up provided for it.”***

**– General KV Krishna Rao, *Prepare or Perish*, 1991.**

6.11 ‘Revolution in Military Logistics’ is a concept being evolved to create a capability-based, modular and a flexible organisation capable of anticipating and predicting logistic requirements with the creation of matching infrastructure and facilities. It proposes a dynamic, distribution-based logistic system that could be projected rapidly and operated efficiently to provide widely-distributed combat forces with uninterrupted fuel and supplies.

6.12 With advancements in C<sup>4</sup>I<sup>2</sup>SR capabilities, along with automation providing total asset visibility of the logistic support system, it will be possible to introduce a major transformation in catering to user requirements as under:-

- Logistic support for the complete spectrum of conflict from CI operations to an all-out conventional war against a nuclear backdrop.
- Centralised logistic planning and execution at the highest level incorporating all available national resources and infrastructure and working towards synergy in the logistic support system of the three Services.
- Adopting a logistic support system that is geared to a limited preparatory period and high intensity, short duration war. This calls for an efficient mobilisation plan which enables rapid move and deployment of formations to designated areas.
- Maintenance of a high state of logistic readiness by reduction in critical logistic voids, high state of equipment serviceability and adequate levels of stocks for self-contained, theatre-based logistic support in the initial stages without dependence on inter-theatre movement of resources.
- Maximum use of dual-use civil resources and infrastructure to enhance military logistic capabilities.
- Adoption of information technologies and decision support systems to improve inventory management and to maximize efficiency.
- Improved survivability of logistic echelons in a high technology weapon environment by dispersion and area air defence cover where possible.
- Adapting to a short duration conflict situation by greater emphasis on intra-theatre re-generation and re-supply of logistic resources and adoption of maintenance concept of replacement instead of repairs.

- Maximum reliance on aerial re-supply for maintenance of momentum especially in mountain and desert terrains.
- Establishing modular and tailor-made logistic arrangements for different types of terrain and operational contingencies.



- Retaining flexibility and redundancy in all theatres without resorting to crisis management.
- Re-deployment of logistic resources in a balanced manner to permit synergized and well-orchestrated operations without any logistic pauses.

6.13 The diversity of terrain and the Indian Army's operational roles pose enormous logistic challenges; these require a dynamic, new approach to logistic support. The vision for the future is to develop a logistic system which is highly effective, responsive and provides the operational commander the freedom and ability to execute his mission successfully. The 'footprint' of logistics for the Army

should ensure a seamless and fully networked system that provides information and situation awareness to enable asset visibility and enhanced velocity of logistic support. Concurrently, there is a need to reduce inventories significantly and rely on predictive and real-time information, coupled with rapid transportation, to meet user demands.

6.14 Harnessing advanced information technology, use of sensors and reliance on decision support systems will improve logistic efficiency and enhance operational readiness and, thus, reduce the number of personnel involved in the supply chain management. These advancements will significantly impact our operational and logistic philosophy for which future commanders must prepare and ensure a smooth change in logistic management.

***“Administration involves not only the management and welfare of men but also their families”.***

**– General NC Vij.**



**CHAPTER 7**

**PREPARING FOR WAR**



**SECTION 19 : FORCE STRUCTURING**

**SECTION 20 : TRAINING**

**SECTION 21 : PROFESSIONALISM AND MILITARY ETHOS**



## **SECTION 19 : FORCE STRUCTURING**

***“It is a fact that infantry attacks always halt and fail at those points where preparation has been insufficient; once more we see that the power of organisation is greater than the bravery of the troops”.***

– Ferdinand Foch, *Artois and Champagne Battles, 1917.*

7.1 Apart from good training and high morale, the single most important factor which contributes to efficient conduct and success in war is well-structured forces. Force structures need to be reviewed continually to keep pace with the dynamics of developing strategic scenarios. Advances in technology and shifts in operational concepts also impact significantly on force structures.

### **Basic Considerations**

7.2 A very wide variety of factors determine the structures of armies. In the Indian context the following aspects have a major influence on the force structures :-

- Prevailing threats and future challenges.
- Operating environments which encompass factors such as terrain and climate.
- Operational roles, tasks and missions allotted to different types of formations.
- Quantity and quality of various weapon systems and equipment available to the Army.
- Availability of funds to undertake changes and modernisation.

7.3 The Army will essentially be structured for its primary role. Nonetheless, it should be able to perform its secondary roles equally well with no change in organisation except that temporary modifications in terms of equipping pattern may have to be resorted to for the purpose as is being done presently in Jammu & Kashmir and in the North Eastern states. In addition to this, forces specially tailored to conduct CI operations such as Rashtriya Rifles and the Territorial Army units employed for such like tasks have to be suitably equipped.

### **Structure and Composition**

7.4 The structure of the Army should ensure that it is capable of the following:-

- Contributing to the overall strategic deterrence for preventing war.

- Engaging in all types of operations extending from one to the other end of the spectrum of conflict, by day and by night and in all weather conditions.
- Conducting offensive and defensive operations with the facility of inter-changing the roles of various formations when required.
- Operating in all terrain and climatic conditions.
- Taking to battle at short notice for conducting sustained operations in high-intensity scenarios against the backdrop of nuclear weapons and the prevailing terrorism and insurgencies.
- Operating jointly with the Indian Navy and Indian Air Force through appropriate structures and mechanisms.
- Ensuring rear area security built into all operational plans.
- Conducting CI operations employing specially designed forces in addition to other units, if required. Towards this end, it should be able to take under command and/or operate in conjunction with state and central police forces.
- Ensuring a sound and effective logistic system at all times with adequate depth in all material stocks.
- Earmarking specially designated forces, with requisite strategic mobility, to assist friendly countries when such assistance is formally sought by them.

7.5 Future wars are likely to be short, highly intense and will involve the use of accurate and very lethal weapon systems. Battle will be fought in all the dimensions concurrently to achieve specified objectives as quickly as possible. Such a battlefield milieu will encompass large battle-spaces, involve a variety of weapon and support systems and demand quick decision-making from military leaders. Systems and personnel will have to display stamina, robustness and staying power in trying conditions.

7.6 To be able to prosecute operations successfully, the Indian Army is gradually progressing towards widening the range of its arsenal. Thus, in addition to the traditional elements of armour, infantry, artillery, air defence, engineers and tactical communications, it is adding newer force multipliers such as wider surveillance, IW capabilities, decision support systems, target acquisition, precision strike and enlarged integral aviation.

7.7 The size, shape and composition of the field forces will be tailored to encompass the following types of forces and systems :-

- Specially earmarked offensive strike formations, ranging from brigade to corps size, to secure objectives in varying depths in mountain, plains and desert terrains.

- Pivot formations capable of adopting a strong defensive posture and launching offensive operations to complement operations of strike formations.
- Airborne, heliborne, amphibious and Special Forces to operate either independently or in conjunction with other strike forces.
- A widespread grid to provide battlefield transparency through the use of various types of surveillance and intelligence-gathering systems during peace and in war.
- Extensive, secure and reliable communications with inbuilt redundancies, offensive EW systems and electronic counter measures systems.
- The ability to leverage the advantages of modern technologies in the spheres of informatics, communications, C<sup>2</sup>.
- Assured and responsive logistic support in all operating environments.

***“Only when our arms are sufficient beyond doubt  
can we be certain that they will never be employed”.***

**– John F Kennedy, *Inaugural Address*, 1961.**

## **SECTION 20 : TRAINING**

***“To lead untrained people to war is to throw them away”.***

**– Confucius, *Analacts, XIII, 500 BC.***

### **Training Objectives**

7.8 Training objectives must cater for ‘management of change’ as well as ‘operational adaptation to change’. They must be focused towards achieving the following: -

- Training in conventional operations against a nuclear backdrop at one end of the spectrum to fighting insurgency at the other end.
- Planning, training and validation of the conduct of war at operational and strategic levels with the focus on offensive operations in a joint Services environment.
- Implementation of a ‘systems approach’ to training to make training more focused, task-oriented, objective, cost-effective and responsive to future requirements.
- Raising the technical threshold of all ranks to meet future challenges.

### **Organisation for Training**

7.9 The conduct of training is a command responsibility. Organisation for training in the Indian Army envisages the control of all aspects of institutional training under Army Training Command with General Staff back-up being provided by the Directorate General of Military Training at Army Headquarters. Issues pertaining to technical aspects of training are monitored by Line Directorates of various Arms and Services at Army Headquarters.

### **Approach to Training**

7.10 Training in the Army should be based on a methodical and well-researched scientific approach. A dynamic, comprehensive and operationally-focused training philosophy is, therefore, a mandatory requirement for producing combat- ready troops and units.

7.11 **Training Culture.** The focus should be on creating a positive and supportive environment within which unit and sub-unit commanders can train their commands in a meaningful and realistic manner with minimum distraction and diversion of effort, personnel or resources. Superior commanders should clearly define the training objectives and then allow maximum freedom of action to subordinate commanders. Training must remain operationally-oriented, need-



based, contemporary and structured towards practical applications.

7.12 **Training of Contingency Forces.** It is imperative that the forces earmarked for specified contingencies be suitably trained for the assigned operational role. These forces should exercise with and in the areas of their affiliated operational Commands. Training schedules, scope and location of training should be given out by the receiving Command Headquarters.

7.13 **Training Infrastructure.** We should progressively standardise the minimum level of training infrastructure required at unit and formation levels. In addition, the creation of training infrastructure in selected stations and training establishments must be accorded the highest priority. Efforts should continue to ensure increased use of simulators, computer-based training packages and promotion of self education and interactive e-learning.

### **Focus of Training**

#### 7.14 **Operational Level.**

- **Joint Operations.** The planning and conduct of joint operations at the theatre level should be further fine-tuned. All issues related to joint training will conform to policies enunciated by the COSC.
- **Inter-operability.** Inter-operability between pivot and strike formations at the operational level and frequent grouping and re-grouping would be the norm in future operations. Complete synergy between the pivot and strike corps will be an operational imperative at the theatre level

strike corps must develop and refine their capability to operate in varied operational scenarios.

- **Non-linear Operations.** Increased ranges of weapon systems and improved mobility of all forces, coupled with high technology communications and battlefield surveillance systems, will result in a wider geographical spread over which the available combat power can be employed. Training for fighting an integrated and simultaneous battle across the entire battle-space in the form of close, deep and rear operations should therefore receive greater attention.
- **Manoeuvre Warfare.** As opposed to attrition warfare which focuses on physical destruction, manoeuvre warfare is an approach to battle which lays emphasis on disrupting the enemy commander's ability to make correct and timely decisions rather than attempting to inflict physical casualties. The need to lay greater stress on this approach during training requires no further emphasis.
- **Directive Style of Command.** Intrinsically linked to manoeuvre warfare is the centrality of the role of the leader and the philosophy of



directive style of command. The directive style of command must be practised to enable commanders and leaders at appropriate levels to seize the initiative and generate action with maximum freedom in consonance with the higher commander's intent.

- **Training in Logistics.** Recent experiences during Operation Vijay (1999) and Operation Parakram (2001-02) have highlighted the importance of sound logistic planning and its execution at all levels. With the induction of high technology, sophisticated equipment into our Army, the management of equipment and engineering should receive added attention.



- **Professional Progression and Intellectual Development.** Officers should be encouraged to develop critical thinking skills and continuously upgrade themselves and widen their horizon. Concurrently, there is a need to train and encourage officers who think ‘outside the box’ because tomorrow’s war could be unconventional (not NBCW) and it is the thinking officer who will carry the day. Additionally, officers need to be formally trained in analysing information and optimising new technological developments that have military applications.

#### 7.15 **Tactical Level.**

- **Basics.** This approach implies a high degree of physical fitness, skill at arms with enhanced emphasis on reflex shooting, fieldcraft, effective handling of equipment, small team operations and the regimental ethos. All training at small team level must be situation-based. Towards this end, possible battle situations must be visualised, analysed, rehearsed and mastered on ground by practical training.
- **Training of Young Officers.** Our young officers are highly motivated, exceptionally courageous and have always led from the front. There is a need to further build upon these sterling attributes through renewed focus on tactical and adventure training. Greater stress should be laid on developing the killer instinct, audacity, originality, innovative thinking, and the spirit of adventure. As leaders they should also be adept at imparting grassroots level tactical training
- **Training of Junior Leaders and Personnel Below Officer Rank.** The role of junior leaders is to translate intentions of commanders into success. Renewed focus is being given on transforming regimental training centres into ‘cradles of excellence’. Human resource development is an essential command function and, in this context, it needs to be understood that the soldier of tomorrow has to be an innovator who can combine imagination and knowledge with action. No amount of emphasis on Junior Commissioned Officers and Non Commissioned Officers training will be enough.
- **Training for Sub-conventional Operations and Counter Terrorism.** Whilst training and preparing for war-fighting, all combat units should be equally trained and prepared to engage in OOTW.

*“There is no genius who tells me suddenly and in secret what I must say or do in any circumstance unexpected by others, it is reflection, meditation”.*

– Napoleon, *Principles of War*, 1813.

## **SECTION 21 : PROFESSIONALISM AND MILITARY ETHOS**

***“You are always on parade”.***

**- General George S. Patton Jr, *in letter to his son, Cadet George S Patton III, 1944.***

### **The Profession of Arms**

7.16 **Nature and Legitimacy.** The laws of armed conflict, encompassing the Geneva and Hague Conventions, set out the duties and responsibilities of commanders and soldiers and the legal parameters within which the military profession must operate. Governed by these long-standing moral and legal imperatives, the profession of arms is a calling established on the following principles: -

- Service on behalf of a legitimate moral authority and being answerable to such authority.
- The conduct of military operations within prescribed norms such as the laws of armed conflict and the concept of military chivalry.
- The requirement for members of the profession to uphold a high standard of discipline to protect the weak and defenceless and to always act for the common good.

7.17 **Function.** The aspect of use and control of lethal force is what gives the military profession its unique standing and importance within the broader society that it serves. It must be emphasised that only a good citizen can become a good professional soldier. Having become a member of the armed forces, one must be an exemplary citizen.

7.18 **Attributes.** Responsibility, expertise and loyalty to the nation and the organisation are the hallmarks of the military profession. These are defined within the military context as follows: -

- **Responsibility.** Responsibility is reflected in the oath of allegiance that the Indian officer and soldier take on joining the Army as well as the dedicated, apolitical and unbiased manner in which they must serve the nation. Responsibility further requires commanders to render objective professional advice to political leaders, to implement loyally and effectively decisions and policies of the Government, to be responsive to the needs and interests of the personnel under command and to be accountable for actions they take. However, the emphasis must be retained on the need to ensure that the Armed Forces, under no circumstances, are influenced by any sectarian or parochial considerations.

- **Knowledge and Expertise.** Knowledge and expertise are the cornerstones of professionalism. Application of knowledge and expertise to situations on ground with a view to resolve problems constitutes professionalism. This is reflected in the military professional's extensive and authoritative knowledge in all fields related to armed conflict including what constitutes appropriate military actions during peace and war. It encompasses leadership and management skills required for planning, preparing and executing complex military operations as well as a sound understanding of the capabilities of personnel, weapons and equipment. There is a requirement to put in concerted effort to enhance our knowledge and acquire expertise through formal education, self-study, training and application of the knowledge imbibed.
- **Loyalty to the Nation and Organisation.** Loyalty resides in the common military identity of members of the Indian Armed Forces and their shared commitment as volunteer citizens in serving the nation. It is derived from high standards of training, self-regulating discipline and strict adherence to the orders and directives of the Service. Loyalty to the organisation includes loyalty to seniors, colleagues and subordinates.

### **The Military Code**

7.19 The military code by which we live is much the same as that which guides all honourable men. The major difference lies in the consequences of observing or violating it. For the officer, the consequences go beyond his person as it affects the lives of all the personnel that he commands.

7.20 **Unlimited Responsibility.** Under this unwritten clause of the military contract, members are obliged to carry out duties and tasks without regard to personal safety and, ultimately, be willing to risk and even give up their lives if the situation requires. While unlimited responsibility is generally associated with service in war, it is also present in military service during peace.

7.21 **The Military Ethos.** In the Army the concept of unlimited responsibility is inextricably linked to, and at the same time sustained by, a shared set of beliefs, values, and a moral code commonly known as the military ethos. Military ethos forms the basis of all aspects of service in the Indian Armed Forces, setting forth principles and ideals which men and women of the Army must subscribe to, both, collectively and as individuals. Its fundamental values are integrity, courage, loyalty, selflessness and self-discipline. This ethos further requires dedication to country, the upholding of Indian values and commitment to professional excellence. Maintaining the military ethos is critical to the Army's effectiveness in war and its readiness and preparedness in peace.

7.22 **War and the Professional Soldier.** A professional soldier is well aware of the horrors of war and of the need to be prepared for the worst. It is the preparation for war as an inherent part of his training, and the requirement to

manage it within established constraints and moral boundaries, which necessitates the military ethos and justifies the profession of arms.

7.23 **Regimental System.** The regimental system is of critical importance to the Army as it is within the regiment or corps that the military ethos is most visibly embodied and practised. Its utility and value lie in the strong sense of comradeship that it fosters amongst members of a regiment or corps and which bonds soldiers together. The regimental system reflects Indian values, history, geography and the particular character of the Indian soldier. Regimental considerations must, however, never be allowed to impinge on professional or operational requirements. Nor should the regimental system be embraced in a way which might fragment or weaken the Army's need for institutional cohesion.

7.24 **The Moral Contract.** In a democracy the profession of arms implies the existence of a moral contract between the soldier and the broader society the soldier serves and is part of. This contract is one of mutual trust, confidence, support and reciprocity. It requires that members of the Indian Armed Forces be provided the tools and resources to do the job expected of them. In return, they are entitled to receive approbation and positive recognition from their fellow Indians. The families of the soldiers who die in battle must be looked after by the society as a part of this moral contract.

7.25 High morals and ethics in the Army are necessary for efficiency, effectiveness and maintenance of esprit-de-corps. Unless these aspects are nurtured throughout the career of the officer there may arise a serious deficiency in the application of our 'Honour Code'. Towards this end, formal instruction in this subject is considered essential.

***“A true victory can be won only with a strategy of tactical positioning, so that the moment of triumph is effortless and destructive conflict is averted”.***

**– Sun Tzu, *Art of Strategy*.**



***“The safety, honour and welfare of your country come first always and every time.***

***The honour, welfare and comfort of the men you command come next.***

***Your own ease, comfort and safety come last always and every time.”***

**– Field Marshal Sir Philip Chetwode,  
during his Address at the inauguration of the  
Indian Military Academy, 1932.**

