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THEATERISED
JOINT LOGISTICS:
A CALIBERATED INITIATION

VIRANDER KUMAR SAINI

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VIRANDER KUMAR SAINI

idsa
INSTITUTE FOR DEFENCE
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ABBREVIATIONS

AG	Adjutant General
AOA	Air Officer in Charge Administration
AOM	Air Officer in Charge Maintenance
AON	Acceptance of Necessity
BSF	Boarder Security Force
CA&G	Controller Auditor & General
CCS	Cabinet Committee on Security
CDM	Chief of Defence Material
CDL	Chief of Defence Logistics
CDS	Chief of Defence Staff
CIDS	Chief of Integrated Defence Staff
CISC	Chief of Integrated Staff to Chairman COSC
CLMO	Command Logistics & Maintenance Officer
COAS	Chief of Army Staff
COL	Chief of Logistics
COM	Chief of Materials
COSC	Chief of Staff Committee
CWP&A	Controller of Warships Production and Acquisition
DCIDS	Deputy Chief Integrated Defence Staff

DCOS	Deputy Chief of Staff
DE&S	Defence Equipment& Support
DGAQA	Directorate General Aviation Quality Assurance
DGOL&SM	Directorate General of Operational Logistics & Strategic Movement
DGQA	Directorate General of Quality Assurance
DLA	Defence Logistics Agency
DLO	Defence Logistics Organisation
DOD	Department of Defence
DPB	Defence Procurement Board
DPM	Defence Procurement Manual
DPP	Defence Procurement Procedures
DPSU	Defence Public Sector Undertaking
DRDO	Defence Research and Development Organisation
ED	Equipment Depot
EEZ	Exclusive Economic Zone
E-in-C	Engineer-in-Chief
FA(DS)	Financial Advisor Defence Services
FDI	Foreign Direct Investment
GLD	General Logistics Department
HQ	Headquarters
IAF	Indian Air Force
IN	Indian Navy

IPT	Integrated Project Team
JAPC	Joint Administration Planning Committee
JCOL	Joint Chief of Logistics
JLD	Joint Logistics Department
JPC	Joint Planning Committee
JRA	Joint Resourcing Agency
JSQR	Joint Services Qualitative Requirement
KM	Kilometre
MES	Military Engineering Service
MGO	Master General of Ordnance
MIC	Military Industrial Commission
MOD	Ministry of Defence
NCC	National Cadet Corps
NLC	National Logistics Cell
OF	Ordnance Factory
PLA	Peoples Liberation Army
PSO	Principal Staff Officer
QMG	Quartermaster General
R&D	Research and Development
RAMC	Royal Army Medical Corps
REME	Royal Electrical and Mechanical Engineers
RFA	Royal Fleet Auxiliary Service
RLC	Royal Logistics Corps

RMA	Revolution in Military Affairs
RML	Revolution in Military Logistics
ROH	Repair and Overhaul
SDR	Strategic Defence Review
SEZ	Special Economic Zone
SMSO	Senior Maintenance Staff Officer
TJLD	Theatre Joint Logistics Department

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Colonel Virander Kumar Saini

INTRODUCTION

The line between disorder and order lies in logistics

- Sun Tzu

Behind every great leader there was an even greater logistician

- M. Cox

My logisticians are a humourless lot... they know if my campaign fails, they are the first ones I will slay

- Alexander

It is more important to destroy those places that contain the elements of military power (the magazines and stores) than soldiers, who are nothing without their stores.

Systeme de Guerre Moderne – General Comte de Cessac

George C Thorpe, in his 1917 book *Pure Logistics: The Science of War Preparation*, wrote¹:

There is something more than academic interest in correctly defining logistics. The purpose of the definition is to establish a division of labour, and if two divisions are properly drawn while the third is not, there will be either duplication of efforts or some functions will be over looked entirely, with the result that certain preparation for war will not be made.

As in the case of warfare the concept and definition of logistics has changed several times. However, after decades of skewed interpretation and misapplication “logistics,” in the defence forces, has become conceptually synonymous with combat service support and sustainment. The 1993 US Operations Manual defines logistics² as:

The process of planning and executing the sustainment of forces in support of military operations. It includes design,

¹ George C Thorpe: *Pure Logistics :the Science of War Preparation*, Franklin Hudson Publishing Co,1917

² Jeffrey C Brlecic, Lieutenant Colonel, “Logistics; CSS, Sustainment : Evolving Definitions of Support”, *Army Sustainment*, Volume 41, Issue 5, September – October 2009, online; www.almc.army.mil/alog/issue/Sep-Oct 09/log_css_sust.html, access on 04 Jan 12.

development, acquisition, storage, movement, equipping, distribution and evacuation function of supply, field services, maintenance, health service support, personnel and facilities. Accordingly, it is an overarching function that occurs across the range of military operations. At the tactical level it focuses on the traditional combat service support functions of arming, fixing, fuelling, manning, moving and sustaining the soldier and his equipment

Whether the definition encompasses all aspects of military logistics can be a matter of debate; but one has to accept that the issue is complex and dynamic. Militaries, the world over, have been acquiring new equipment and technologies at regular intervals thus necessitating a change in logistic support. Indian defence forces also have come a long way as far as their equipment profile is concerned and new technologies and equipment are in the process of being acquired at a frantic pace. Whether the logistic setup, inherited at the time of independence, has kept pace with the change or not; and whether it has the ability to absorb future changes requires introspection. Wars will always be a national effort, and will involve the three services, the government and all its organs, the media and the public. Thus conflicts require the collective will and force of all constituents. Earlier the collective will or what is today termed 'jointness' was limited by intent, technologies and organisational setups. However as became evident after the Gulf War of 1991, Operation Enduring Freedom in 2001, and Operation Iraqi Freedom in 2003, the mantra for success is 'jointness', especially joint operations by the three Services – the Army, Navy and the Air Force³. Future military operations will perforce require a joint logistics setup.

If 'jointness' is the norm of the day and is the precursor of future developments, then a few basic questions must be addressed in our context. These are:

- (a) Are the Indian defence services geared for 'jointness' in operations and logistics?

³ Daniel L Haulman, "Inter Theater Air Lift challenges of Operation Enduring Freedom", online: <http://www.afhra.af.mil/shared/media/document/AFD-070912-039.pdf>, Accessed on 06 September 2011

- (b) If not, then what is hampering it?
- (c) What should be done to achieve joint logistics?
- (d) What are the changes required and what should be the methodology for making these changes?
- (e) Who all should be responsible for bringing about these changes?
- (f) How to manage this process of logistic transformation?

In our case even the scope of the appropriate joint logistics model will have to be defined at the outset since the concept is yet untested and untried in India. The models followed by other countries may be good for reference but may not meet our requirements. The desired logistics changes and their implementation could also depend on the overall changes in higher structures of the defence forces. In tangible terms, there is no doubt that joint logistics besides facilitating joint operations will provide best value for the money spent. It will also be worthwhile to evaluate not only the end state of the desired changes but also specify the interim stages. A thorough analysis of the desired degree of change, evolutionary or revolutionary or both, will dictate the contours of the reforms to be undertaken. Thus in this present matrix where there are a large number of players along with existing design complexities, the issue is not only change, but the management of the change. This paper analyses the present state of affairs and reasons thereof and recommends a possible road map for achieving joint logistics.

Theatre logistics is the process of planning for and providing goods and services to support military forces operating in a specified area. Logistic support focuses on the movement and sustainment of all the forces operating in a given theatre of operation. Theatre logistics are oriented towards sustaining full spectrum operations both homeland based and forward based. Theatre based logistics, or theaterised joint logistics thus refer to integration of military logistics- including the operational logistics - of the three Services within a region. The logistical set up in a combat zone in our context will generally be operational logistics at the command level which can be referred to as theaterised logistics. It will be

worthwhile to analyse whether it will be possible to achieve theaterised joint logistics in the absence of an overall joint logistics setup; and if yes, to what extent. Some steps have been taken to effect a degree of inter Service cooperation in the field of logistics. The Joint Administration Planning Committee (JAPC), part of HQ Integrated Defence Staff (IDS) with representatives from all three Services is placed under the Chief of Staff Committee (COSC). The JAPC is tasked with preparation of joint administrative plan to supplement and support the overall mobilisation and operational plan developed by the Joint Planning Committee (JPC), for any future operation or contingency plans involving two or more Services. Some logistics integration among three Services has also been achieved in past which include medical services under Armed Forces Medical Services, Postal Services, Military Rail Organisation and Embarkation Headquarters, work services under Directorate of General Works, procurement of some common items of armament, ammunition, vehicles, general stores, certain rations and fuels, oils and lubricants⁴. These efforts have certainly affected an economy of effort and unity of purpose. One reason why this could be achieved may be that it involved specific expertise, not created through services training, i.e. doctors, postal works department etc and secondly its impact on the basic cadre within three Services was negligible.⁵

The lack of jointness was clearly evident during Indian peacekeeping operation in Sri Lanka and during the Kargil War of 1999.^{6,7} Both

⁴ Bhasin Sushil, Colonel, "Integrated Defence Logistics, A Systems Approach" *Combat Journal*, April 1995, p.13

⁵ Vinod Anand, "Joint and Integrated Logistics System for the Defence Services", *Strategic Analysis*, April 2001, p.91

⁶ Standing Committee on Defence (2008-2009), No 36, on Status of Implementation of Unified Command for Armed Forces, p.7, online: <http://idsa.in/system/files/Standing%20Committee%20on%20Defence%2036th%20Report%202008%202009.pdf>, accessed on 11 May 2012

⁷ Raja Menon, "Jointness in Strategic Capabilities: Can We Avoid It?", *Journal of Defence Studies*, Volume 1, Issue 1, August 2007, online: http://idsa.in/jds/1_1_2007_JointnessInStrategicCapabilities_rmenon, accessed on 11 May 2012

these operations were limited by the extent and employment of forces. Thus deficiencies were taken care of by individual Services from other sectors. The defence reform process which had gained momentum post Kargil War has also petered out with government constituting various committees chaired by bureaucrats, who in the Indian context are not specialists, especially in the Ministry of Defence. Thus there is no healthy debate- and coupled with lack of intent -the issue lingers on and no one knows who will be able to bell the cat.⁸

⁸ Anit Mukharjee, "The Future is Now", *The Times of India*, 17 Jun 2011 online; timesofindia.indiatimes.com/2011-06-17/edit-page/29665949_1_kargil-war-defence-staff-air-force, accessed on 05 Jan 2012

I. THE EXISTING LOGISTICS SYSTEM AND ITS LIMITATIONS

The existing logistics system of Indian defence forces is essentially the one that was inherited from the British. It has seen some modification from time to time and its compartmentalised and disjointed growth has been able to meet, at best, the short term requirements, whenever the need arose. The system was basically designed by British to meet the requirements of World War II. The inherited logistic system included ordnance echelons, ration depots, and base repair depots for the Army, Equipment Depots (EDs) for the Air Force and stores depots (material organisation) for the Navy. After independence, the Defence Public Sector Undertakings (DPSUs) and Ordnance Factories (OFs) were established for manufacturing defence equipment under licence. Initially they also undertook depot level repairs and maintenance of the equipment manufactured by them. However, the public sector work culture ensured that there were always time over runs and capacity constraints and the Services had to set up an elaborate infrastructure for maintenance, up to depot level repairs and overhaul (ROH), for not only the imported equipment but also for some of the equipment licence manufactured by these DPSUs and OFs. Consumables and break down spares also had to be procured by the Services themselves thus increasing the inventory levels. Thus a huge support cadre had to be created in each service.⁹ Presently the field formations in three Services have their own logistics set up to support operations. Logistics planning, provisioning, procurement and distribution is carried out independently by each of the three services. This has resulted in divergent approaches, duplication in holdings, training and infrastructure. The fall out of these individual systems is a lack of

⁹ Nagalia A K, "Comprehensive Logistics Management in Defence", *Journal of Defence Studies*, Volume 4, No 3, Jul 2010, pp 16-17.

convergence and holistic approach to defence needs, resulting in sub optimal utilisation of resources and efforts.¹⁰

Broad Logistics Setup in the Army

At the Army Headquarters, the agencies responsible for logistics are organised under four Principal Staff Officers (PSOs) to the Chief of Army Staff (COAS), i.e. the Adjutant General (AG), Quartermaster General (QMG), Master General of Ordnance (MGO) and Engineer-in-Chief (E-in-C). These PSOs advise the COAS on matters related to their functioning but there is very little lateral interaction.¹¹ Then there are Deputy(s) COAS who carry out certain logistics functions and who report to Vice COAS.

- AG is responsible for recruitment, personnel management, discipline, ceremonial and welfare and other such functions. Hence part of the personnel management of the logistics cadre is looked after by the AG.
- QMG is responsible for quartering, rations, military farms, remount and veterinary services, transport, canteen services, land etc. It exercises control over Directorate General of Supplies and Transport, Directorate General Remount and Veterinary and Military Farms.
- MGO exercises control over materials support and equipment maintenance/management support through Director General of Ordnance Services, and Directorate General of Electronics and Mechanical Engineering.
- E-in-C is responsible for equipment for Army engineers. It is also responsible for operational and peace time engineering and plant aspects. It also controls the Military Engineering Service (MES).¹²

¹⁰ Singh J V, "Transformation in Military logistics", *Air Power Journal*, Vol.4, No1, Spring 2009, p.167

¹¹ Vinod Anand, No 5, p.92

¹² Army Headquarters, online: <http://www.bharat-rakshak.com/LAND-FORCES/Today/225-Army-Headquarters.html>, accessed on 21 September 2011

- For operational logistics there is Director General Operational Logistics & Strategic Movement (DGOL&SM). Then there is Directorate General of Weapons and Equipment. Both these directorates functions under Vice Chief of Army Staff.
- Every Directorate technically controls various units and subunits and is also responsible for processing demands and provisioning items related to its functioning. The administrative control of these units and subunits is the responsibility of local military authority.

This actually means that management and control of logistics services is not under one unified single authority. The logistics functions are managed by a number of branches and there is large number of directorates under different PSOs. At the field army level the branches have independent units, sub units, depots, and base repair facilities - they too have limited lateral interaction.¹³

Broad logistics set up in Indian Air force (IAF)

At the Air Headquarters, the Air Officer in Charge Administration (AOA) and the Air Officer in Charge Maintenance (AOM) are two independent functionaries. The material management and physical distribution functions are performed by the logistics branch. Maintenance of aircraft and equipment is the responsibility of engineering branches (mechanical & electrical). The AOM therefore, to a large extent, provides single point maintenance and controls these activities, by constituting an initial provisioning committee and maintenance planning team. The AOM also provides logistics support for the newly inducted aircraft and weapon systems.

- AOA performs functions akin to the AG of the Army and some of the functions of the QMG of the Army.
- AOM performs functions that are similar to those of the MGO and some of the functions of the QMG of the Army.

¹³ Bhasin Sushil, No 4,p-12

- At Command HQ logistics and maintenance branches are responsible to the Senior Maintenance Staff Officer (SMSO). The Command Logistics & Maintenance Officer (CLMO) is responsible to the SMSO for all logistics activity of the wings/units within the Command.
- IAF has a number of equipment depots, base repair depots and other installations which cater to requirements of the service.

Even although it is smaller organisation compared to the Army, the logistics functions of the IAF are still not integrated. There is also an effort to separate maintenance from the rest of the logistics activity which is evident from the controlling branch at the command level and below. At the lower levels logistics are a part of the maintenance branch. This is not in line with accepted practices. Conventional wisdom suggests that the logistics encompasses maintenance and not vice versa which seems to be a trend in the IAF.¹⁴

Broad Logistics Set Up in Indian Navy (IN)

The Chief of Material (COM) is the PSO to the Chief of Naval Staff and is responsible for maintenance and logistics support, armament supply, naval projects, engineering, electrical and weapon systems and procurement of naval stores. He is also the technical authority for all the dockyards and base repair organisations. The Chief of Logistics (COL) functions through COM. However responsibility for medical services, recruitment, service conditions and welfare is that of the Chief of Personnel.¹⁵ In Navy Deputy Chief of Naval Staff is responsible for aviation related procurement.

- The COL is responsible for clothing and victualling, armament supplies, transport and other logistics support functions generally falling under revenue procurement.

¹⁴ Interview with an IAF officer who wishes to remain anonymous, New Delhi, September 13, 2011

¹⁵ Vinod Anand, No 5, p.92

- Controller of Warship Production and Acquisition (CWP & A) also functions through Vice Chief of Naval Staff and is responsible for all warship production in India and acquisitions from abroad.
- Logistics support for newly introduced equipment is planned and organised after selection and ordering of new equipment by the user directorate.
- On naval ships various departments are headed by specialist officers i.e., executive, engineering, electrical, logistics etc.
- Navy has separate depots for stores and armaments at various stations to cater to the needs of the service.
- At the command level majority of the logistics are controlled by CSO (personnel, & administration). The Admiral Superintendent of the Naval Dockyards functions directly under Commander in Chief of the Naval Command.

Thus it is evident that logistics functions in the Navy are also not under one authority just like the other two Services. Further logistics support in case of aviation, weapons, armaments and medical stores is also not handled by logistics cadre. Thus at the Naval HQ itself, there are number of agencies responsible for logistics functions.¹⁶

When considering theaterised logistics there are structural issues about jurisdictions of Commands HQ of the three Services. There are 17 Commands in all besides the Andaman & Nicobar Command and Strategic Forces Command i.e. seven commands each of the Army and Air Force and three Commands of the Navy. The areas of jurisdiction and location of HQs in most cases is at different locations. In many a cases one command; say of the Army has to deal with two command HQs of the other Service.¹⁷

¹⁶ AP Revi, Rear Admiral, Revolution in Military Logistics” *Indian Defence Review*, Volume 23 (3), Jul-Sep 2008

¹⁷ Das PS, “Jointness in India’s Military – What it is and what must be”, *Journal of Defence Studies*, Volume I, No 1, August 2007, p.10

The logistics at operational level is closely linked to procurements whether revenue or capital that is carried out at the Service HQ or the MoD level centrally. The funds involved in this exercise are quite large. The key statistics of the defence budget for 2010-11 and 2011-12 are tabulated below:¹⁸

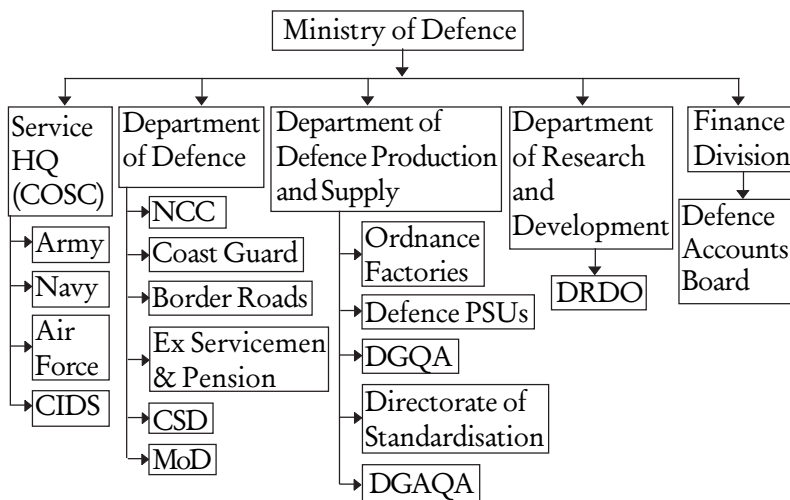
	2010-11	2011-12
Defence Budget (In Rs Crores)	1,47,344.00	1,64,415.49
Revenue Expenditure (In Rs Crores)	87,344.00	95,216.68
Share of Revenue Expenditure (%)	59.28%	57.91%
Capital Expenditure (In Rs Crores)	60,000.00	69,198.81
Share of Capital Expenditure Budget (%)	40.72%	42.09%

Under capital expenditure head major portion goes towards big ticket purchases. The procurement process for which is much extended and thorough. Only a smaller portion of the budget then remains for balance of smaller capital acquisitions. Similarly out of Revenue Budget, approximately 55 per cent goes towards pay and allowances. The balance 45 percent i.e. approximately Rs42000 crores (as per defence budget for the 2011-12), is for revenue procurements. The statistics are thus staggering. In our current organisation there is no joint integrated structure for a revenue budget that ranges between Rs 40, 000 to 50,000 crores. Even a one percent saving in costs would mean a saving of Rs 400 to Rs 500 crores. Hence purely for economic reasons it makes so much sense to have joint integrated structure.

The defence procurement set up at MoD level for capital procurement consists of a Defence Acquisition Council, Defence Procurement Board and Acquisition Wing. This structure came

¹⁸ Laxman K Behra, "India's Defence Budget 2011-12", *IDSAC Comment*, March 7, 2011, online: http://idsa.in/idsacomments/IndiasDefenceBudget2011-12_lkbehera_070311

into being in 2001. Any logistics system demand close interlinkages between user, procurement agency, supplier and the planning and budgeting agencies. The existing setup along with various agencies involved in defence planning, provisioning and procurement as it exist today is given below. The efficacy of such an organisation is self evident. There are a number of departments that are responsible for processing, procuring, manufacturing, quality control and allied functions but are under different agencies and there is a lack of consumer interface. The only possible method left for coordination in such a setup is through committees.¹⁹



Defence Acquisition Council

Defence Acquisition Council is headed by the defence minister. The members are Minister of State for Defence, three Service Chiefs, Defence Secretary, Secretary (Defence Production and Supplies), Scientific Advisor to Defence Minister, Financial Advisor (Defence Services), CISC, Special Secretary (Acquisition) and

¹⁹ Sivasubramanian TR, "Chapter on Defence Budget and Planning Process" *Defence Planning, Problems and Prospects*, New Delhi, Manas Publications, 2006, p.47

DCIDS (PP&FD). Its Basic role is to accord, in principle, approval to capital acquisition and long term perspective plans.

Defence Procurement Board (DPB)²⁰

Chaired by the Defence Secretary, it comprises of the Secretary DRDO, CISC, the three Service Vice Chiefs, Special Secretary (Acquisition) and Financial Advisor (Acquisition). The role of the DPB is:

- (a) To approve the annual acquisition plans of the three Services.
- (b) Amendment of the annual plans.
- (c) Confirm, modify inter-se and intra-se priorities to acquisition proposals.
- (d) Monitor progress of major schemes.
- (e) Consider/ recommend procurement on single vendor basis.
- (f) Approve fast track procurement.

Acquisition Wing

This is headed by a Special Secretary. It has three divisions: land, maritime systems and air. Each of these three divisions has a joint secretary or equivalent level officer. These are acquisition managers, technical managers and financial managers. All capital acquisitions are handled by the acquisition wing.²¹

Drawbacks of the Current System

The logistics system being followed today has evolved over period of time and to be fair and to give due credit, it may have met the needs of the organisation in the past. The advantage of the system is that its methodology and procedures have been developed and

²⁰ Sehgal HS, "Defence procurement Process", *Defence Planning Problems and Prospects*, New Delhi, Manas publications, 2006, p82

²¹ Kapur BM, "Integrated Tri Services perspective planning". *Defence Planning Problems and Prospects*, New Delhi, Manas publications, 2006, p.118

refined over many years. These systems have thus become part of all instructions and cover many a contingencies. The role and authority is also clearly defined. However, the present system does not include finance, manpower, transportation and accommodation costs and factors that are dealt as separate entities but are important issues in overall cost of inventory. At present, there is considerable divergence in procurement, stocking, maintenance and support functions. This leads to lack of standardisation, overstocking and increase in cost of inventory. Besides procedural and organisational drawbacks, there is lack of national perspective on logistics. One of the reasons could be the variety of equipment sourced from different countries/agencies by each individual service without the inputs or views of the other two Services or could be due to lack of appropriate monitoring agency. Besides, outsourcing in services is yet to take off in any significant way. Even the civil industry may not be fully prepared for the outsourcing by Services. Currently there is very limited involvement of private sector in defence logistics and there are excessive bureaucratic controls over defence finances. The lead times for procurement are high with debilitating delays in financial and production planning. All these factors hamper easy absorption of technology and are not tuned to fast pace high technological warfare changes of the future. Some of the major weaknesses in the present logistic system are summarised below:²²

- (a) There is no single agency responsible for procurement, distribution, accounting, consumer feedback and retrieval. Even within each stage there is lack of accountability. There are a large number of committees with shared or no responsibilities at higher level.
- (b) There is a lack of coordination between the development plans of the nation and defence requirements. There is no organisation at the national level to oversee, coordinate and integrate defence needs with national developments. There is

²² Vinod Anand, No 5, pp-93-94

little evidence to indicate that national level logistical planning is done keeping in view the defence requirements.

- (c) The three Services have not evolved a common logistics doctrine and philosophy of logistics support. There is limited interaction and inter communication amongst the three Services in matters of logistics. At times, parochial considerations dominate decision making which militates against the requirement of organisational economy.
- (d) There is multiplicity of logistics agencies with no single authority responsible for logistics preparedness. Lack of centralised logistics support encourages duplication and wasteful expenditure.
- (e) The lack of coordination among the multiple procurement agencies of the Services, work against the principles of economy and leading to higher costs.
- (f) There is lack of standardisation and codification of items in the inventory. There are multiple stocking echelons in each Service leading to high levels of duplication and large inventories.
- (g) The three Services have undertaken automation in the sphere of logistics independently. Jointness and integration are possible through common systems only.
- (h) The DPSUs and OFs are not accountable to consumers and are only integrated at MoD level through committees.
- (j) There is lack of expertise in the field of logistics and there is no system in the Services of developing logisticians in the Services. All the PSOs dealing with logistics are not from the logistics stream.
- (k) Due to lack of clear cut directions, the system is prone to adhocism which can be manipulated by vested interests.²³

²³ Bhasin Sushil, No 4, pp-14-16

(m) The MoD personnel handling logistics and are vested with higher financial powers are not of specialist cadre.

Recent media reports regarding the huge gaps in the operational capabilities of the forces which have surfaced since March 2012 and captured the attention of the nation are an indication that besides procedural delays the system is structurally not geared to meet the requirements of the Services.²⁴ Thus there is a need to overhaul the existing system rather than just modifying it by taking a piece meal approach. The drawbacks highlighted above are mostly related to high level functioning which further reinforces the point, that the approach required for achieving jointness in logistics has to be top down.

²⁴ Josy Joseph, "Panel Finds Chinks in Army's Armour", *Times of India*, 26 April 2012

II. LEARNING FROM EXPERIENCE OF OTHER NATIONS

A comparison of the systems followed by our armed forces and that of the UK -which had the same origin - shows up the vast differences between the two as they exist today. Interestingly, despite their overwhelming victory in World War II and with their experience of several very large scale tri-service military operations with US forces, under overall supreme commanders, such as General Douglas MacArthur in the Pacific Theatre and General Dwight D Eisenhower in Europe, both the US and UK spotted serious flaws in their higher defence organisations. These countries have since made innumerable changes in their defence organisation setups.²⁵ Changes made with a view to modernise and enhance the effectiveness of militaries have been a universal phenomenon. However, the extent and specifics of the transformation have obviously varied and have been guided predominantly by the security and threat perceptions of each individual nation. What has however, been common across the board is the impact of the information technology revolution on logistics management. Perhaps the most visible example of logistics transformation has been the US, which has modelled its logistics on the basis of its experience in various wars in recent times. Though the US model need not necessarily serve as a role model for other militaries to follow, it however offers an example of managing logistics in the modern day conflict scenario where rapid deployment and sustaining mission oriented logistics will need to be taken cognizance of.²⁶ Various reforms undertaken by other countries have not been totally successful and smooth. Another issue to remember is that in the quest to achieve jointness it should not be forgotten that the responsibility for military planning must never be divorced from the responsibility for execution followed

²⁵ Das PS, No 16, p-3

²⁶ Singh JV, No 8, pp 147-148

by management-which is so strikingly prevalent in our case. From the military perspective the successive defence reforms in the UK have tended to strengthen the central government at the expense of the Services. It is a general perception that in UK, the Chiefs in their collective capacity have been reduced to a subordinate advisory level with the triumvirate of the Chief of Defence Staff, the Permanent Under Secretary and the Chief Scientific Advisor advising the Government on military matters. Thus the changes introduced should also protect the position of the Chiefs since the defence forces cannot be run purely on the basis of corporate logic and ethos even if at first glance such approaches appear to make economic sense.²⁷ However, the main argument against adopting a model similar to that of the US or UK is that it would not serve our purpose because both the countries have never faced a real threat to their homeland and their armed forces have hardly ever been deployed for defence of the mainland. Their strategic objective has thus been global, although, the UK's, overseas responsibilities have been on the decline over the past 50 years. On the other hand India may have to deal with sub conventional, restricted border skirmishes of the Kargil kind or a limited conventional war under the shadow of nuclear weapons. Some limited expeditionary operations in the neighbourhood might also well crop up at times, as in the case of Operation Pawan in Sri Lanka in 1987. But these are likely to be few and far between.²⁸

USA

The logistics support for the US armed forces can be broadly divided into two levels i.e. national and theatre. National logistics is the process of planning for and providing goods and services for the support of the nation's military forces and their operations.²⁹ While some regard this aspect as strategic logistics;

²⁷ Phadke RV, "India's Higher Defence Control Organisation", *Strategic Analysis*, Volume XXIV No 5, August 2000.

²⁸ Depinder Singh, "*The IPKF in Sri Lanka*", Noida, Trishul Publications, 1992

²⁹ Henry E Eccles coined the phrase "National Logistics" in his book *Logistics in the National Defence*, Harris Burg PA; Stackpole, 1959, p.45

the other view is that the strategy should devolve only on the effect of logistics activity and should not associated with a particular level i.e. unit size, equipment type, or force or component type. Some are of the opinion that the national level should connote the organisation structure at higher level³⁰ National level logistics include; the assurance of the availability of strategic material and fuels; supporting a military industrial base, developing and procuring new material systems. The US Department of Defence (DOD) relies on service departments, its Defence Logistics Agency (DLA) and non DOD government agencies to manage these concerns. The DLA is one of the 13 independent agencies within the DOD. This is significant for military planners because the focus of the office of the Assistant Secretary of State is acquisition and policy issues rather than the development of military requirements and their accompanying scientific and technical issues. The DLA provides supply support, technical and logistics services to all branches of the military and to several civilian agencies. The DLA is active in both peacetime and wartime missions. The DLA Director reports to the Under Secretary of Defence for Acquisition, Technology and Logistics through the Deputy Under Secretary of Defence for Logistics and Material readiness.³¹

The origin of DLA dates back to World War II when America's huge military build up required the rapid procurement of vast amounts of munitions and supplies. The current structure of DLA has evolved over a period of time with successive reorganisations. The integrated management of supplies and services began in 1952 with the establishment of a joint Army-Navy- Air Force support centre to control identification of common inventory to be supplied. This was the first time when the three Services bought, stored and issued items under a common nomenclature. Subsequently, the single manager concept was adopted wherein

³⁰ As obtained from article on "How the Army Runs, Chapter 12 logistics", online: www.GlobalSecurity.org- United States logistics command, accessed on 22 November 2011

³¹ United States logistics command, online: <http://www.globalsecurity.org/military/agency/dod/dla.htm> , accessed on 22 November 2011

the Army managed food and clothing; the Navy managed medical supplies, petroleum and industrial parts; and the Air Force managed electronic items. Slowly it was felt that the desired uniform procedures were not being achieved by this single manager concept. Thus at the intervention of the then Secretary of Defence, Robert S McNamara, a separate common supply and service agency known as Defence Supply Agency was created on October 1, 1961 under Lieutenant General Andrew T McNamara and began operations on January 1, 1962. However major changes have occurred post the Goldwater Nichols Reorganisation Act of 1986, which designated the DLA as a combat support agency and stated that the selection of the DLA director would be approved by the Chairman, Joint Chiefs of Staff. Post operations Desert Shield and Desert Storm in the 1990s, the role of the agency for supporting military contingencies and humanitarian assistance has grown dramatically. In November 1995, the DLA launched a billion dollar project to replace the DOD's aging procurement programme with a DOD wide standard automated procurement system that supported electronic commerce. Since its establishment in 1961 the agency has successfully standardised procured, managed and distributed consumable items throughout the military services. Thus the agency is fulfilling a major logistic role that was previously performed by the individual military services.

However, both national and theatre logistics concepts are constantly evolving and the distinction between the two is being blurred by the tendency towards more centralised management, flattening to a two level maintenance and towards logistics support that transcends traditional lines of communications.³² The major advantages of the overall defence management review in US have been that it has been able to economise, standardise procedures, and continuously evolve to achieve national objectives. However, there are apprehensions that it has departed from the basic principle that the commander must control logistics and is increasingly being dictated to by commercial practices than operational needs. The current transformation of US armed forces logistics began in 2001

³² How the Army Runs, No 48.

with adoption of Revolution in Military Logistics (RML) concept which provided a clear vision of the logistics changes required. It laid down six tenets relating to how the armed forces were to be supported in the future. These are: seamless logistics systems, distribution based logistics systems: agile infrastructure: total asset visibility: rapid force projection and adequate logistics footprint.³³ The most interesting aspect of the DLA organisation is that it has a self-evaluation and updating cell. Incidentally during Gulf War the DLA representatives were in place at 71 different locations before operations began and also provided 72 logistics experts within the theatre who communicated directly back to the DLA HQ for early warning and the speedy processing of requests.³⁴

UK

The logistics support to the defence forces of UK is provided by a central agency – the Defence Equipment and Support (DE & S). In addition, the three Services have their own operational logistics units. Logistics support in the British army is based upon the twin pillars of service support (the supply chain); and equipment support (maintenance and equipment). The combat service support within the British Army is provided by the Royal Logistics Corps (RLC), the Royal Electrical and Mechanical Engineers (REME) and Royal Army Medical Corps (RAMC). Within a fighting formation, logistics units from these corps typically account for about 30 percent of the manpower of a division, excluding certain members of the RAMC who are fully trained fighting soldiers. In an operational division, the commanders of all logistics units operate from separate, self contained headquarters under the command of a colonel who is the Division's Deputy Chief of Staff (DCOS). The Royal Navy has Royal Fleet Auxiliary Service (RFA) which is a civilian manned fleet, owned by the MOD. Its main task is replenishing the warships of the Royal Navy at sea with fuel, food,

³³ Singh JV, No 8,p.143

³⁴ Rudi Williams, "logistics Agency Lines out its support to Forces in Iraq", American Forces Press Service, online: http://www.defenselink.mil/news/Jun_2003/no6063004_200306063.html.August 14, 2006.

stores and ammunition. Other RFA tasks include amphibious support and sea transport for the Army. The RFA is managed by the Commodore RFA, who directly reports to the Commander-in-Chief Fleet for the administration and operations. The RFA boasts of a significant number of large ships, especially in relation to the warships it supports. The Royal Air Force has two expeditionary logistics wings known as No 42 & 85 (Expeditionary Logistics) Wings, consisting of three squadrons each.³⁵

The British Army logistics transformation started in 1993 with creation of Royal Logistic Corps (RLC) following the recommendation of the MoD's logistic support review. The RLC was formed by the merging of transport, ordnance, catering, pioneers and some elements of the Royal Engineers. There are 17 regular RLC regiments, plus two training regiments and 16 Territorial Army Regiments including the catering support regiments. Further the Strategic Defence Review (SDR), presented to parliament by Secretary of State for Defence in July 1998, recommended changes in the combat service support to the British armed forces. The SDR created a Chief of Defence Logistics (CDL), a four star uniformed general, to control the existing, and later the reconfigured integrated logistics organisation. The CDL was designated to head the Defence Logistics Organisation (DLO). His mandate was to reorganise the single service logistics support into a tri service logistic organisation. The SDR rationalised various functions like procurement, repairs, storage and distribution, transportation, defence estate management and various other logistics functions to increase efficiency and reduce cost.³⁶

The DLO was a key element in the UK ministry of defence, responsible for supporting the armed forces throughout the various stages of an operation or exercise; from training, deployment, in theatre training and conduct of operations, to recovery and recuperation and ready-for-redeployment. The DLO had a budget

³⁵ The defence supplier directory armedforces.co.uk, online: www.armedforces.co.uk/rafidex.html, accessed on 23 November 2011.

³⁶ Vinod Anand, No 5, p.95

of £ 8.6 billion in 2004-05 representing over 20 percent of the defence budget. The DLO was organised into three layers: the delivery layer, the enabling layer and the defence logistics board. The delivery layer was to be the customer interacting element of the DLO; Integrated Project Teams (IPTs), Naval Bases, depots etc. The DLO had assigned two star generals for external interface with principal customers. The enabling layer provided a range of specialist support to IPTs and others within the DLO and Defence Procurement Agency. The Defence Logistic Board chaired by the CDL provided strategic leadership, direction and governance to the DLO and was the ultimate decision making body in DLO. In a further review, the DLO was merged with the DPA on April 1, 2007 to form the DE & S. Procurement reforms were a separate but integral part of defence logistics transformation programme focusing specially on industry where the DLO spends about 80 per cent of its money.³⁷ Post merger the appointment of CDL was converted into Chief of Defence Material (CDM). Some of the DE&S responsibilities for joint operations include:

- (a) Logistics planning, resource management, contractual support and policy for three Services.
- (b) Global fleet management and land based equipment management.
- (c) Support of the naval fleet and all naval systems.
- (d) Communication and information systems.
- (e) Transport and movements.
- (f) Food and ration packs.
- (g) Ammunition.
- (h) Fuel, oil and lubricants.

³⁷ Defence Logistics organization, online: <http://webarchive.nationalarchives.gov.uk/+http://www.mod.uk:80/DefenceInternet/MicroSite/DLO> ,accessed on 11 December 2011

- (j) Postal services.
- (k) Clothing and tentage.
- (l) Storage for all equipment and material.

With approximately 29,000 personnel, the DE&S is one of the largest organisations within the UK's MOD. It has an annual budget of around £ 16 billion (2010-11) and has offices at 65 locations and representatives currently at 150 specific sites.³⁸ The DE&S is providing support to an approximate troop strength of 1, 75,000 personnel. According to the *Strategic Defence and Security Review* of 2010, a fresh review will take place every five years. In the 2010 review, the strength of the defence forces of UK was envisaged to be reduced by 17,000 military personnel and 25,000 civilian elements in the MOD.³⁹

China

The Peoples Liberation Army (PLA) logistics doctrine till about year 2000 was dependent on the “People War” concept and not on creation of military assets. A part of this doctrine stipulated that an individual must carry his own support and sustainment packages while fighting on the frontline. Since the 1930s, the PLA philosophy had been of company size units which had to grow their own subsistence on small farms throughout the Chinese provinces. However, PLA has been slowly improving its logistics concepts since mid 1990s, but it was not until 2002, when Hu Jintao- then vice president of the People's Republic of China, issued the order to transform PLA logistics, that the rapid renovation really began. Once Jintao became China's president and also the chairman of Central Military Commission (CMC), PLA logistics wer accorded top priority. Hu Jintao's order to

³⁸ The Management of Defence, Defence Equipment and Support (DE&S) on website of UK defence information online: www.armedforces.co.uk/mod/listings/10020.html, accessed on 14 November 2011

³⁹ General outline of the *Strategic Defence and Security Review* 2010 on website of UK defence information accessed online: www.armdforges.co.uk/articles/raq4d074a/bbaa3b.html, accessed on 13 December 2011.

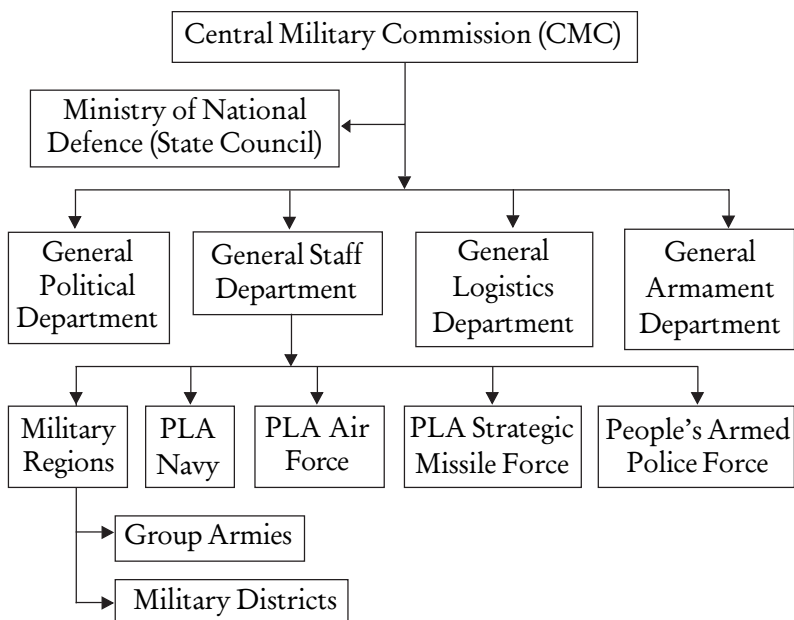
transform PLA logistics was inspired by several military events. The first was the PLA's lack of success in the Sino-Vietnamese War in 1979. During this conflict, the PLA could not establish dominance over the ill equipped and smaller Vietnamese military. Hu blamed the PLA's Korean War era logistics support plan for the failure of this operation. In 1990, Hu and other top officials cited the US Army's Operation Desert Storm as a logistics model to emulate. They were impressed by the United States logistics setup which was instrumental in the defeat of the Iraqi military in a matter of days with high levels of technology and weaponry.⁴⁰ The other historical lesson was an incident that took place as early as October 25, 1949 when three regiments of PLA landed at Jinmen on Taiwan Island, prepared to deal a fatal blow to the fleeing Nationalists. Two days later, with the landing vessels stranded above the tide mark, their ammunition and provisions exhausted, the PLA troops were wiped out. The battle provided a much needed morale boost to the Nationalists, accustomed to defeats by the PLA on the mainland, and resulted in the current situation across the Taiwan Strait. The PLA chiefs, analysing how they had snatched defeat from the jaws of final victory, looked at the broken supply lines and began a long overhaul of logistics support.⁴¹

In the existing organisation General logistics Department (GLD) is the logistics headquarters of the PLA and directs the logistics supplies including production, supply, transportation, housing, pay and medical services on behalf of CMC. The department commands the logistics systems within the PLA and also directly provides certain logistics support functions. The GLD was first established in 1949 as the People's Revolution Military Commission General logistics Department and was renamed the PLA General Logistics Department in 1954. The GLD is third among the four general headquarters in PLA on order of protocol. It is headed by a department head and a political commissar. The

⁴⁰ David A Payne, Captain, "Chinese Logistics Modernisation", *Army Logistician*, volume 40, issue 4, July-August 2008, p.10

⁴¹ Cheng Yunjie, Xu Zinzhang, "PLA continues long March of logistics Reforms", July 28, 2011 online www.xinhuanet.com, accessed on 02 Dec 11.

current department head ranks No 7 in the CMC. The structure of CML is as shown below:⁴²



Once the equipment is procured, its upkeep becomes the responsibility of the GLD. Although the GLD controls a few depot level maintenance facilities, primarily for heavy vehicles, maintenance is primarily the responsibility of the owning formation or PLA units. Extensive repair functions, particularly for aircraft and Naval vessels involve the manufacturer. The GLD manages the daily supply and distribution system of the PLA apart from running the large agriculture and capital construction operations of the PLA. It also operates Army run factories, although the management of these factories may not be in the hands of active military personnel.

⁴² "General Logistics Department", online: www.globalsecurity.org, accessed on 08 Dec 11.

Few logistics improvements were implemented by the PLA from the end of World War II till the Sino-Vietnamese War. Transportation assets included captured assets from Japan and subsequently the one purchased from the Soviet Union. To make up for the lack of progress, Hu Jintao and Jiang Zemin both focused on achieving parity with the US military systems. The GLD gradually began to shift from supporting itself to purchasing subsistence from civilian markets. It began implementing privatisation measures to reduce the size of the standing Army. Functions like managing barracks and building maintenance shifted from PLA units to civilian companies. The GLD and PLA are linking civilian and military logistics to provide what the former chairman of CMC, Jiang Zemin, termed “precision logistics”. Improvements in the PLA’s procurement process have also been successfully implemented. During the summer of 2004, the PLA and civilian authorities in North East China held a successful training event that focused on implementing the transformation of field feeding and procurement of supplies through civilian sources. The overall success of that exercise has led to the implementation of a supply chain management system and an increased reliance on civilian support.⁴³

In an important move to reform the PLA’s logistics system, the GLD has introduced the joint logistics concept, which seeks to overhaul the old system by bringing together the resources of three Services. In 2000, the logistics departments of the seven military regions were reorganised as Joint Logistics Departments (JLD). Under the joint logistics scheme, military region (china is divided into military regions) Air Force and Naval fleets transferred their general logistics elements - common to all services- to the military region JLD while retaining only the specialised logistics support elements that are unique to their own service. In 2003, a further reform was initiated to bring in the “great joint logistics” wherein the Army dominant military region JLDs were to be further reorganised into Theatre Joint Logistics Department

⁴³ David A Payne, No 58

(TJLD), a joint logistics headquarters staffed by personnel from three services. Joint logistics staff officers, who understand the needs of three Services, were assigned to TJLD. The difference between general and specialised logistics would thus no longer exist.⁴⁴ The actual process in TJLD started in April 2011 when CMC officially approved the reforms suggested by the Jinan Military Region in Eastern Shandong Province for the setting up of Theatre Joint Logistics Department in the region.⁴⁵

Russia

After becoming president in 2000, President Vladimir Putin's main aim was to reclaim the glory of Russia which he knew was not possible without a strong military. Thus by April 2003 President Vladimir Putin and minister for defence, Sergey Ivanov formulated a plan to transform Russian military.⁴⁶ Setting up a unified logistics system was also considered essential for the reform of the defence and security infrastructure. Services such as warehousing, transport and healthcare for both the military and the paramilitary forces (answerable to the interior ministry) were to be integrated under a single command in each military district. Among the goals and tasks of military reforms, as per the white paper on defence presented to ministry in October 2003, was the speedy unification of logistics support and technical assistance to the military and other services. The unified logistics system pre-supposed certain changes in the military system itself to include:

- (a) Optimisation of the command and control system and elimination of duplication of command structure in the regions.

⁴⁴ "PLA General Logistics Department", online: www.sinodefence.com, Accessed on 13 Oct 2001.

⁴⁵ Cheng Yunjie, Xu Zinzhang, No 59

⁴⁶ Zurab Agladze, Lieutenant Colonel, "Russian Military Reforms; Problems and Challenges", Strategic Research Project, US Army War College, Carlisle Barracks, Mar 2010, PA 17013-5050, online: www.dtic.mil/cgi-bin/GetTRDOC?Location=02&doc=GetTRDoc.pdf&AD=ADA523907, accessed on 07 January 2012.

- (b) Unification of procurement processes for the military and other paramilitary forces.
- (c) Merger of medical, infrastructure support and transportation systems that would lead to significant reductions in personnel.
- (d) Introduction of a region based system of recruitment within the boundaries of the administrative districts.

In 2005-06, a new mechanism for commissioning procurement projects, and further monitoring their delivery was introduced. In 2005, the Federal Service on State Order and the Federal Military Technical Service were created within Russian Federation MoD to ensure efficient use of funds. In March 2006, the Military Industrial Commission (MIC) was set up to centralise and strengthen the operational management of the military industrial complex for unified supply and equipment procurement for all associated ministries with the MoD playing the lead role. The MIC was given the responsibility for overseeing long term strategic planning and operational management of R&D; procurement projects; monitor pricing of defence projects and the overall restructuring of the military industrial complex. A joint approach for logistics support and procurement was to be adopted with the help of a joint military civil agency dealing with the procurement programmes for all defence and security agencies. The aim was to establish a joint system of procurement for all state defence orders and services.⁴⁷

Pakistan

Structurally the Indian and Pakistani armed forces are almost similar and have evolved little after independence; however Pakistan has a ministry for defence production which has Directorate General Defence Purchase and Directorate General of Munitions Production as separate entities. Directorate General of Defence Purchase is responsible for procurement and disposal of defence

⁴⁷ Irina Isakova, "Russian Defence Reforms: Current Trends, November 2006", online: <http://www/strategicStudiesInstitute.army.mil>, accessed on 11 January 2012.

stores.⁴⁸ The Department of Defence Purchase is responsible for procurement of defence stores based on the priorities of the Services. The logistic areas and all logistic activities are unified under a single commander. The logistic areas are directly under the General Headquarters. These have the flexibility to operate in field and peace areas and ensure intimate logistic support to fighting formations. In addition Pakistan also has a National Logistics Cell (NLC), which is a crisis management organisation of the federal government responsible for mobilising the entire nation during wartime, especially for the transportation needs. The NLC was created in 1978 when Gen Zia-Ul-Haq was president and works in close cooperation with Pakistan Army and is primarily staffed by armed forces personnel. The NLC ensures smooth transportation of essential commodities all over the country on a self supporting basis, without burdening the government.⁴⁹

Takeaways from Transformation Efforts of other Nations

There are certain obvious lessons that India can learn from the above review of the transformation efforts of other nations. The first and foremost lesson is that different countries have different models that have evolved over time - some of them successful and some unsuccessful. In most cases large number of changes was incorporated after adoption of new organisations. The evolution process has been gradual and extended. In all cases the systemic changes have been made under government directions and insistence and a resolute political will has been the common factor.

The structures, systems and authorities responsible for implementation were first put in place for central provisioning, procurement and other related issues under a single head and were made responsible for logistics support to armed forces. This

⁴⁸ Official website of Directorate General Defence Purchase online :www.dgdp.gov.pk/default.aspx, accessed on 13 December 2011

⁴⁹ National Logistics Cell (NLC) online: www.pc.gov.pk/organisation/sections/nlc.pdf, accessed on 26 November 2011.

appellate authority, so appointed, was made responsible for the transitional and final organisational structure and its functioning.

To ensure that responsibility for military planning is not divorced from the responsibility for execution of military plans, the command and control of logistics was vested in service officer(s) in almost all cases. The senior most logistics officer, so appointed is generally of a rank equivalent to that of the Service Chiefs.

The specialist and affiliated combat support units and fighting formations have generally not been tampered with, in a majority of the cases. However, certain changes are inevitable once the overall system undergoes major modifications.

The national government has not shied away from making frequent legislative changes to reform the system which rarely happens in our case. In a majority of the cases the political bosses have been the harbingers of the change

There has been deliberate attempt to involve the private sector in the defence logistics system. For this the private sector was allowed to develop gradually and the industrial base was harnessed and integrated. This has reduced number of layers in the military logistics set up thereby reducing strength of standing military.

It is evident from evolutionary process of other nations that piecemeal modifications or the single manager concept i.e. efforts to standardise inventory (tried out by the US) without addressing procurement issues and nominating single authority did not succeed. Thus there is no need for India to try these out.

An important learning for us is, that it has taken a minimum 20 to 30 years for other nations to achieve some degree of success once they earnestly started the process of modernising their defence logistics systems. We are thus lagging behind by almost three decades and have not even commenced making any such changes as yet.

Broadly, there have been many stages in this process of transformation in logistics of other nations, especially US: the single manager concept followed by uniform cataloguing and

standardisation; then shifting to separate supply and contracting agencies and finally settling for a single logistics agency.

The independent agency so created is separate and independent of the three Service Chiefs but is manned by personnel from the three Services.

These transformations have resulted in huge financial savings and reductions in manpower. The agency so created have a mechanism of self evaluation.

III. USHERING A CHANGE

The logistician's dilemma thus will always be that, at the macro level the system should ensure economies of scale, transparency, velocity, no duplication and also must conserve scarce resources by sharing and cost cutting but at the micro level the need is to decentralise and put resources at the disposal of the field commander.⁵⁰ Thus, though joint logistics appears to be easy in theory but its practical implementation is a complex task. In a joint services scenario, it would require planning and reassessment to streamline the functioning so as also to highlight its shortcomings. Thus a gradual step-by-step approach towards logistics transformation may be more practical. Creating an appropriate joint logistics footprint involves more than structural changes. It also involves the development and refinement of the concept, idea and material support. Defence forces also require internal consensus to bring about change besides the development of the industrial base and harnessing advanced technology. Any change in the military set up is not easy and the same is true of our defence forces as of others. Even in the case of the US and UK, changes in the logistics of the defence forces were the consequence of political intervention through Goldwater Nichol's Act 1986 of US and Strategic Defence Review (1998&subsequent reviews) in UK. Gen Starry, a former head of the US Army Training and Doctrine Command has listed the seven conditions which are needed for changing a military organisation.⁵¹ Which are as applicable to us as to the US Army? These are:

- (a) First, a mechanism for identifying the contours of change is needed.
- (b) The reformer should share cultural and intellectual commonality through shared educational and training

⁵⁰ Bhalla S, No 17,p.112

⁵¹ Donn A Starry, "To Change an Army", *Military Review*, No 3, March 1983,p.63

background. What it means for us is that we should have a military authority with requisite powers to bring about the required change.

- (c) There should be an effective spokesperson for change.
- (d) There is need for consensus building to get a wide audience for new ideas.
- (e) There should be continuity of service for the architects of change.
- (f) The champion of change must be at the apex of the organisation. In our case it has to be at IHQ/MoD level, probably drawing his power directly from the government.
- (g) Change must be undertaken after rigorous trials and their visibility demonstrated to all stakeholders.

Further, modern militaries the world over have adopted the concept of Revolution in Military Logistics (RML). The RML concept aims at total asset visibility, real time response and focused logistics and creating a capability based, modular and flexible organisation capable of anticipating and predicting logistics requirements along with the creation of matching infrastructure and facilities. The system is based on dynamic distribution that could be put in place rapidly and operated efficiently to provide widely distributed forces with uninterrupted supplies and repair facilities. The RML envisages a logistics system which amalgamates power of information with modern transportation and electronic commerce. Thus jointness in the three Services both operational and logistical becomes national objective and not a defence objective alone. The joint logistics setups in other nations, especially US and UK have come about because of strong political will almost 50 years after World War II. This is the one lesson of history we need not to learn in our endeavour to achieve jointness, especially joint logistics.

In the Indian context the logistics system of the defence forces will primarily be dictated by type of operations that are, or may required to be undertaken i.e. the guarding of our borders and the defending of our maritime interests. A large number of our

forces are operating in terrains with limited infrastructure in terms of roads, rail, and procurement areas coupled with poor industrial base. Thus defining appropriate scope of joint logistics model including joint logistics organisation becomes important for inter service cooperation and for synchronisation of all components of military power to achieve a common military aim. Thus four essentials of jointmanship which must be adhered to in our case are:⁵²

- (a) Trust and confidence with sincerity of purpose to understand the capabilities and limitations of each service.
- (b) Operating on the basis of partnership and mutual respect for each other's capabilities.
- (c) Cooperating with each other rather than competing. It may be worth remembering that the competition is with the enemy.
- (d) Finally, joint operations involve the use of the right resource at the right time and not necessarily a bit of everything.

The real question here is not what kind of changes the organisation wants or desires but the kind of changes that will make it more efficient. Most of the changes in past had been evolutionary and this is likely to continue in the future too. Thus the main issue is change. Debating or worrying about nature of change or its likely character after the change, will distract us from harnessing its full potential. Logistics transformation should be the logistics commander's business which has sadly not been the case till now. It is worth pondering as to why logistic transformation has not happened or has only taken place after political intervention in militaries world wide. Probably the key leaders who are/were responsible to bring about changes were/are not fully committed.⁵³ The main question in our case is to analyse whether we have a logistics commander at all, who can initiate a change. Joint

⁵² Vinod Anand "Joint Vision for the Indian Armed Forces", Delhi, IDSA, 2001

⁵³ Victor Maccagnan, Jr, Lieutenant Colonel, "Logistics Transformation-Restarting a Stalled Process", *Carlisle Paper*, Jan 2005, on line <http://webcache.googleusercontent.com/search?q=cache:http://www.strategicstudiesinstitute.army.mil/pdffiles/pub593.pdf>, accessed on 23 September 2011.

operations are today a reality, a necessity and the desired way of conducting operations that will obviously demand joint logistics. Joint operational logistics therefore should fulfil three main objectives which are:⁵⁴

- (a) To enhance strategic responsiveness of the forces to meet deployment timelines.
- (b) To reduce the logistics foot prints in the area of operations without compromising on combat effectiveness.
- (c) To reduce logistics costs without reducing war fighting capabilities and readiness.

Questioning Status Quo

Some efforts have been made by the three Services in the past to streamline the logistics set up and procedures. However most of these efforts are limited to reorganisation within each Service. During Kargil War there was shortage of ammunition and even before the war ended, teams were sent abroad for replenishment of ammunition for the Bofors guns. Similarly during this war itself the IAF had to modify bombs and make emergency arrangements for laser guidance.⁵⁵ This proves that logistic transformation had simply not happened to the degree necessitated by the need of the hour to meet both operational and tactical requirements. It is learned that the Army is planning major doctrinal and organisational changes through adoption of a new study. At an annual media event held on January 15, 2011, the then Chief of Army Staff, General VK Singh, stated that the Army would re-organise, restructure and relocate various formations to help it become a more agile and lethal force, that is flatter and more responsive. According to him the focus will now shift from being an adversary specific force to a capability based force that

⁵⁴ Headquarters, Defence of the Army, *US Field Manual 4-0*, "Combat Service Support", Washington, DC; US. Department of the Army, August 2003 online: <http://www.survivalebooks.com/free%20manuals/2003%20US%20Army%20Combat%20Service%20Support%2020235p.pdf>, accessed on 08 October 2011, pp.14-15

⁵⁵ Vinod Anand, No 5, p.93

is able to fight across various spectrums and in different type of terrains ranging from the mountains to the deserts both during night or day, in the hot summer or in the harsh winter. The Army is also looking at the theaterisation of combat support resources to ensure synergy of resources in a theatre. Thus Army aims to be organised in a way that allows it to operate in two theatres independently so that one theatre will not be dependent on the resources of another if both are engaged in combat operations.⁵⁶ Another element in the Army's re-organisation plan is the formation of a mountain strike corps that is likely to be deployed closer to India's vast mountainous border with China, either in the East or in the North.

The Army also wants the government to build all-weather roads right up to the border and also connect all important formation headquarters in the high altitude areas of Ladakh, Arunachal Pradesh, Uttarakhand and Himachal Pradesh. Already more than 75 tactically and strategically important roads are reportedly under construction in the areas bordering China, and the Army wants these roads to be operational as quickly as possible to enhance its ability to deploy and maintain adequate troop strength along the border. Thus after a long pause the Indian defence planners are introducing some fresh concepts and gearing up to meet future strategic challenges.⁵⁷ But, yet again this is a standalone plan of a particular Service and not joint planning, which is the need of the hour.

Thus even after years of brainstorming and experimenting, the three Services have still not managed to set up a centralised logistics organisation, which is so crucial. Until now, we have not been able to even decide which of the three services will take the primary and commanding role in the logistics command and the questions of hierarchy and manning are making matters worse. Logistics support will be crucial for carrying out and sustaining an attack

⁵⁶ Ali Ahmed, "Ongoing Revision of Indian Army Doctrine" *IDSACOMMENT*, January 6, 2010, online: http://idsa.in/idsacomments/OngoingRevisionofIndianArmyDoctrine_aahmed_060110, accessed on 10 May 2012

⁵⁷ Gokhale Nitin, "India's Doctrinal Shift", *The Diplomat*, January 25, 2011.

into enemy territory, and certainly will need coordination at highest possible level. Some reports reveal that logistics support and operations of the Indian Army are clearly uneven. It seems the inventory of ammunition and essential stores of the defence forces are not adequate. The efforts to mitigate the problem of low inventories is like treating the symptoms not the disease. Since India is a vast country with various types of terrains, the setting up of a logistics command, as discussed in some quarters, will be a daunting task. On the other hand rivalry between the Army, Navy and Air Force over the integration and organisational set up is often exhibited at various forums.⁵⁸ There is also the issue of ownership of assets and their effective management. According to the Controller and Auditor General's (C&AG) report the processes and systems governing military logistics and supply chains, as in the case of most other aspects of the Indian defence services are out dated. Besides, there are many aspects of the Indian military's logistics and supply chain set up, from planning and procurement to storage and supply that need to be overhauled.⁵⁹ Thus there is urgent need to ensure that the present state of affairs is not allowed to continue for long and solutions sought for better functioning.

Desirability for Change

Individually there would be hardly any one in three Services or the MoD who does not feel the need for integrated and joint logistics. Considering purely the economic aspect, which is one of the principles of logistics, there is a need to do something.⁶⁰ Post the Kargil War of 1999, the Government had set up a task force under Arun Singh, former minister of state for defence to look into various aspects of defence management. This was in the light of the grave deficiencies in India's security management system

⁵⁸ Ravinder Pal Singh, "Chapter on India's Arms Procurement Decision Making", *Volume 1: China, India, Israel*, p 69, online: www.sipri.org/files/books/SIPRI98singh03.pdf accessed on 10 January 2012.

⁵⁹ India Still Struggling to Set Up Centralised Logistics Command", *Defence Now*, May 05, 2011 online: <http://www.defencenow.com/news/166/india-still-struggling-to-set-up-centralized-logistics-command.html>, accessed on 21 October 2011

⁶⁰ Mrinal Suman, "Jointmanship and Attitudinal Issues", *Journal of Defence Studies*, volume 1, No1, p. 71

identified by the Kargil Review Committee. The main focus of the task force's recommendations was to bring about improvements in the organisation, structures, processes etc, through the integration of civil and military components and by ensuring jointness among the armed forces to the extent desirable including in defence procurement. Subsequently a Group of Ministers was also constituted to go into details of recommendations. The whole process is yet to see the light of the day.⁶¹ Thus there has to be a serious reason for not implementing a change which individually agreed upon by all and recommended by a task force. Few of the reasons could be:-

- (a) Military organisations are historically known for their conservatism, besides the natural human nature to resistance a change.
- (b) There has been no harbinger of change. Change has to be effected by highest possible authority where whole system converges. In our case all systems converge only at the level of the defence minister through various committees.
- (c) Since logistics involve a large canvas requiring experience and expertise and there is general lack of clarity at the higher level, radical steps are avoided due to risk of failure.
- (d) There may be turf battles among the three Services, the bureaucracy, production agencies and the political class.
- (e) Deep rooted corruption does not allow new transparent systems and accountability procedures to come through.
- (f) There have not been adequate efforts to create an internal consensus within three Services on this important issue.

The desired changes thus require a major overhaul and will certainly fall in the realm of revolutionary changes which only take place

⁶¹ Yogendra Narain, "Chapter on Defence Procurement", *Defence Planning Problems and Prospects*, New Delhi, Manas Publications, 2006, p.66

once in a while and require a well thought out strategy and political will. It does not however mean that all desired changes should be simultaneous and abrupt. Once the decision to change is taken, the phases and extent of change would need to be deliberated and then implemented. The logistic set up for formations deployed in tactical battle field areas will be dictated by the operational task and may not require radical change or it can be undertaken after testing the viability of a logistic transformation in a non battle zone or in the rear/ hinterland logistics areas. This does not however mean that a piecemeal approach should be taken for achieving the desired transformation.⁶²

The moot question then is: who will affect the change. Currently the jointmanship in the Indian context is skin deep and cosmetic. The three Services compete with each other, often necessitating the external mediation of the MoD. By trying to muddle through with a defence management system that is clearly outdated and largely dysfunctional, the country's interests are not being addressed. In such a scenario it is unrealistic to expect the Services to arrive at any consensus. Thus the Government of India needs to constitute a bi-partisan (or multi-party) parliamentary committee, assisted by experts to undertake a wide ranging, comprehensive review and re-examine national security issues and the higher defence organisation including the logistics setup.⁶³ A national task force headed by Naresh Chandra, a seasoned bureaucrat-diplomat was set up to assess the current state of the country's national security management system.⁶⁴ Whether the report once submitted will cover the issue of jointness especially joint logistics remains to be seen and even more importantly whether the government will muster the political will to implement the recommended changes is another question.

⁶² Singh JV, No 8, pp144-146

⁶³ Prakash Arun, "India's Higher Defence Organisation; Implications for National Security and Jointness", *Journal of Defence Studies*, Volume1, August 2007.

⁶⁴ Nitin Gokhale, "Facing India's Security Future", *The Diplomat*, 16 July 2011, online: <http://the-diplomat.com/2011/07/16/facing-india's-security-future>, accessed on 22 December 2011

IV. INDIA'S DEFENCE LOGISTICS NEED

India shares land boundaries with six countries. The total length of these shared boundaries is approximately 14880 km. India's boundaries with its neighbours cut across various terrains - from the Sir Creek to the Thar desert; the plains of Punjab to the Himalayan regions of J&K and the North East; and the riverine terrain in the East. Large tracts of the border are covered with thick forests and high mountain ranges. To make matter worse large tracts of this boundary are disputed. The 886 km border with Pakistan in J&K and the entire 3488 km long border with China are not recognised by one party or the other in most sectors. This manifests into holding of actual ground positions by the troops. Though the responsibility of manning the borders is that of the Border Security Force (BSF) and other paramilitary forces; but most of the disputed borders are defended by the Army. The department of border management under the ministry of home affairs was itself created in 2004. Most of the border areas remain inaccessible and under developed due to the difficult terrain and lack of facilities like proper roads, educational institutions, developed markets etc. Lack of economic development alienates the population from the mainstream and lead to proliferation of undesired personal interest by various local agencies. Needless to say the majority of the operational plans of India, as well as of its adversaries, are geared for these remote and difficult areas. The large scale build up required in these areas for the sustenance of operations with limited axis of maintenance is a huge logistic challenge. The demography coupled with economic alienation is fully exploited by India's neighbours in most of the cases.

Besides the long land borders, India has a coastline that extends for approx 7517 km. Considering the EEZ of approximately 2.02 million sq km, it is a great asset. However, from security point of view this coastline is highly indented with numerous creeks, rivulets and streams along with habited and uninhabited islands, and mangrove forests. These water channels, most of which are

interconnected and run deep inside the land, render the coastline porous and vulnerable to cross border infiltration, smuggling and terrorist attacks. India has island territories on its Eastern and Western seaboard. The Andaman and Nicobar islands comprise of 572 islands but only 36 of them are inhabited. The Lakshadweep archipelago has 36 islands out of which 10 are inhabited. Their strategic location, i.e. proximity to the important sea lanes of communication coupled with their considerable distance from mainland add to the vulnerability.⁶⁵ Thus with such a varied landscape the defence forces of India have requirements that are specific to them. Some of these peculiarities are summarised below:

- (a) A major part of the Army is deployed in the northern part of India including the North East, whereas the Navy is concentrated in the South. Because of inherent flexibility IAF has no such limitation of deployment.
- (b) Most of the border areas where the Army is deployed are underdeveloped.
- (c) Most of the border areas have harsh climatic conditions preventing large scale habitation, and therefore there is very low industrial and commerce activity in these areas. The major procurement areas are far from these forward troops. Thus over time the Army has developed its own system of supply chain management.
- (d) A majority of the anticipated operations involving hostile neighbours are likely in these difficult terrains which have a limited road network to allow the build up and sustenance of forces for long time.
- (e) Many forward areas are cut off during winters or monsoons thus requiring advance stocking translating into large inventories.
- (f) Due to difficult serving conditions in forward areas coupled with large strength deployment, it is necessary to have

⁶⁵ Das Pushpita, "India's Border Management", New Delhi, Institute of Defence Studies, April 2010.

substantial strength of troops in peace areas to ensure proper rotation.

- (g) More than 70 per cent of the main equipment is of foreign origin. Due to the long lead time of procurement and political and commercial considerations the repair and reserves issues need to be addressed immediately.⁶⁶
- (h) Deployment of the Indian Navy and Air Force is comparatively in the more developed areas that are close to markets where resources are available.
- (j) Policy of procurement from ordnance factories and defence PSUs coupled with regulatory restrictions has discouraged private sector entry into the defence sector. The production of defence equipment was, until recently, entirely a government function. The Industrial Policy Resolution, 1948 restricted the entry of the private sector into this industry. However, in May 2001 the sector was opened for private participation, with 100 percent private sector ownership and FDI of up to 26 per cent but met with limited success due to the low FDI limits.
- (k) The Defence Procurement Policy (DPP) and Defence Procurement Manual (DPM) for capital and revenue procurement have been reviewed five times each since 2002. Frequent amendments in policies lead to undue delays since a large number of cases have to be re-processed.⁶⁷
- (l) Though the service chiefs are responsible for the logistics of their own service, they have very limited financial powers. Most of the powers rest with the civil bureaucracy which has limited accountability.

⁶⁶ Report by KPMG for CII, "Opportunities in the Indian Defence Sector, 2010", online: http://www.in.kpmg.com/TL_Files/Pictures/Opportunities_in_the_Indian_Defence_Sector.pdf, accessed on 26 September 2011

⁶⁷ Supplement 2010 to Defence Procurement Manual 2009, online: <http://mod.nic.in/dpm/supplement2010.pdf> & <http://mod.nic.in/dpm/body2.htm> accessed on 20 January 2012

- (m) There is no uniformity of product availability in different regions of the country. This results in transportation of products over large distances. There are large numbers of items specific to defence requirements which are manufactured in selected locations only.
- (n) A majority of the procurements are made centrally and transported to regional commands/ forward areas. Till date there is limited emphasis on outsourcing or local resourcing.
- (o) The equipment used by the defence forces in forward areas is technically more modern than the repair facilities available for its maintenance in those areas. The Services also have better supply chain management than most of the local state governments. This requires additional effort for repair and recovery for Services especially in cases of switching over to new technology or technique. This also leads to slow technological absorption and adoption of modern practices by the Services because of lack of local expertise.
- (p) Unlike the more advanced countries where defence supplies have always been procured from the civil industrial complex, the Indian private sector is yet to develop to the extent where outsourcing or the concept of third party logistics can be adopted.

It is evident that the defence services of our country require a set up that is tailored to their needs. Ideas and processes successfully adopted by other countries can be studied and modified to suit our requirements. However blending of new ideas with experience of other countries to meet our specific requirements will need to be thoroughly analysed by experts who have on ground experience.

Way Forward

Maintaining a high degree of defence preparedness is not a matter of choice for our country. Already the international community expects India to play a more active and decisive role in world affairs. Defence capability is certainly one of the important components of national statecraft available to the government. The current situation demands changes in concepts, philosophy, decision

making processes, organisational structures, infrastructure, research and development for sustenance and jointness not only within three Services but within the various government and non government agencies. This will facilitate the absorption of latest technologies and simplification of the processes. There is need to shelve the current piece meal approach of simplifying some processes and the standalone use of technology in for a specific service or department. It is necessary to have in place an organisation for making mid course corrections to replace the present system of personality oriented initiatives. Technology as an enabler cannot be harnessed to its full potential till a system based approach is adopted. Defence logistics is intrinsically linked to the overall defence management of the three Services and changes may be difficult without addressing the overall command and control structure of the three Services.

Tactical or operational level logistics, which falls under the responsibility of field commander, is closely linked with logistics at the strategic and/or national level. Thus any changes desired at operational level will automatically be manifested at the higher level as well. Thus to have joint logistics at theatre level would not only involve the modification of theatre command structure but also lead to major changes at the Service HQ and MoD level. This would also require a national logistic setup involving various other ministries such as surface transport, railways, petroleum, shipping and transport, civil aviation, finance, home affairs, environment, commerce, food and consumer affairs besides a member of the Planning Commission.

There is also a need to make a shift from the system of functioning by committees. All the functions relating to logistics i.e. policy, planning, provisioning, procurement, quality assurance, standardisation, R&D, warehousing, delivery, retrieval and disposal should ultimately fall under one agency at the highest possible level. This would require a major shakeup in the existing organisational setup which will encounter a high degree of resistance. Thus as it stands today, the only way is to take a top down approach and abandon the bottom up approach which has been tried and has not been effective. Such major reforms will require political intervention which may be followed by a proper

legislation as in case of US where transformation was achieved through series of legislations.

Considering resistance to change, the changes envisaged needs to be phased over a period of time. In fact the contours of changes at lower level of functioning need not be spelt out at first and will flow out of successful implementation of higher organisational structures and procedures. Thus there is need to constitute a National Task Force consisting of representatives of major stakeholders which can then be followed by parliament standing committee on the whole issue. Once the broader contours are decided, a champion of change, or an authority with sufficient powers will be needed and given adequate time to bring in desired changes.

Defence logistics needs to transfer certain non core functions to the private sector which would require robust industrial and technological base. This will mean providing incentives and encouraging private industry for meeting defence logistics needs. This will require incentives in form of increasing FDI limits, tax concessions and by setting up of SEZs specifically for defence needs. Only after doing so, will the issue of outsourcing or third party logistics fructify. As a first step, there is need to align defence product specifications to national specifications for common use items to increase participation of private players.

To ensure theaterised joint logistics, the geographical zones of the various operational commands of the three Services need to be merged and redefined. Till that happens it will be worthwhile to integrate all acquisition and procurements for the three Services at the MoD level, as a first step. This means the setting up of a central agency for both revenue and capital procurement which should be responsible for all actions beyond acceptance of necessity (AON) stage. The issues of standardisation, commonality of use, inventory management systems, supply chain management issues, appropriate software and tracking systems will be a natural fall out when the organisation and responsibilities are clearly in place. Without waiting for big ticket changes to start, which would obviously take time, the three Services should internally be able to place logistics under one single authority within each Service.

V. THEATERISED JOINT LOGISTICS IN THE INDIAN CONTEXT

India's threat perceptions would continue to be impelled by the primary long term strategic challenges from China and the secondary medium term threat of a lower magnitude from Pakistan. Besides, the wide spectrum irregular or sub conventional conflict is finding increasing acceptance for meeting political and strategic objectives throughout the world. This tends to exacerbate the internal dimensions of the threat matrix that are rooted in socio-economic inequalities, regional disparities and political mismanagement. The acceptance of the theatre commander concept, given the nature of our likely commitments in near future and the resource driven nature of our defence policy today appears difficult.⁶⁸ Thus there are two options, one where the establishment of theatre command becomes a pre-requisite which automatically would lead to theaterised joint logistics; and the other more likely scenario is that of accepting the realities of today and tries to formulate a model for a joint theaterised logistic setup. It obviously will not be standardised across different theatres but be tailor-made based on operational realities dictated by various factors.

The efforts for jointness thus far have been too insignificant. On the other hand jointness itself falls short of total integration, which should be the ultimate aim of logistics restructuring. It involves integrated planning and application of military power for synergy in employment of forces and optimal utilisation of forces to achieve the given objectives. The concept of jointmanship lies in having a common doctrine, culture, logistics and maintenance facilities. It is desirable that jointmanship is ultimately transformed into integration. One of the key factors for ensuring that jointmanship happens will require the men to undergo cultural change. The

⁶⁸ Kapil Kak, "Direction of Higher Defence: II", IDSA, online: www.idsa-india.org/an-Jul-8-1.html, accessed on 16 September 2011

officers who are posted to a joint services environment would be required to shed their individual service traditions, culture, customs and ethos and mould themselves into a joint service environment. A closer staff consultation amongst the three Services as also co-location of military staff with civilian counterparts would also be necessary. A lack of understanding of the capabilities and limitations of the other two Services would result in the inability to fully exploit the resources available with the Services in terms of manpower, weapon systems and equipment. Commanders at all levels would be required to have a comprehensive understanding of the capabilities and limitations of all the resources under their command or those that are likely to be employed in support of their operations. The main impediment to achieving true jointmanship is however the attitude of the Services themselves, combined with a sense of insecurity. Fear of being overshadowed by the other Service, lack of opportunities for joint training and the bias of senior officer's towards a single Service experience often leads the three Services to function at cross purposes with each other.

It is not that the problems arise only because of inter-service friction; there is still so much that remains to be done within each service itself. In logistics there is heavy dependence on national resources that requires coordination with number of civil agencies that may, or may not be part of the MoD. The Services are using a large variety of equipment that is sourced from multiple agencies, both domestic and foreign. A systems approach to logistic support would help in controlling inventories through standardisation and codification. Jointness in equipment management will mean high cost benefits. However there seems to be a systemic problem in adopting joint logistics, in spite of all these advantages. Excessive civilian control over military has led to reluctance on the part of the military to evolve innovative operational solutions to strategic problems. Weak higher politico-military decision making systems and institutions, paucity of authoritative civilian guidance and lack of opportunity for military leaders to communicate their requirements and concerns are some of the other impediments hindering development of armed forces as modern machine. The Indian military lacks experience in theatre level joint operations

and its organisation structure is not geared for large scale offensive. In the modern economies of today, it is mandatory to get best value for money. Thus the way forward is through mergers, acquisitions and integration of various agencies to obtain economy of scales and best value for the money spent. India is an exception among democracies, in that, the defence service HQ is not treated as an integral part of the government and Service Chiefs are not the primary professional advisers to the Defence Minister.⁶⁹ The old concepts of jointness based on cooperation and coordination between different wings of the military with tri-service execution are no longer adequate. There is need to cement this with structures which are based on integrated planning and operations under one unified authority with responsibility and accountability. Such an institution will, obviously, have personnel from different wings under it who will also be subordinate to it and not to their own service chiefs. The Indian system, in which these things are processed in a triumvirate fashion, is unsuited for coping with the new environment.⁷⁰ Hence, as the situation stands today the possibilities of achieving theaterised joint logistics are remote - although it is the need of the hour.

Challenges and Opportunities

Besides the stages enumerated in the previous section the Indian defence forces however require an additional stage i.e. the integration of the Services with the MoD. This becomes all the more necessary in the case of logistics because the several organisations that facilitate logistics at the macro level are part of MoD. Organisations like DRDO, various DPSUs, OFs, DGQA, DGQAFA, Directorate of Standardisation, DG Acquisition etc are major stakeholders in achieving jointness. If the lessons of logistics transformation of other countries are taken into consideration, specialist logistics units supporting fighting formations have more or less remained unchanged or have evolved

⁶⁹ Vinod Anand, "Achieving Synergies in Defence", online: www.idas-india.org/an-Jan-9-4.html, accessed on 23 August 2011.

⁷⁰ DasPS, No16, p.1

only in specific cases. The key areas for logistic transformation in our case are going to be integration at the HQ Command / Regional level and levels above that. In fact major restructuring will be required at the IHQ of MoD level which would involve MoD in big way. The existing systems of supervision by committees cannot be expected to be a harbinger of change.

Theaterised joint logistics would automatically follow if India were to have joint operational theatre commands. For this legislative changes will become mandatory for the restructuring into theatre commands. This issue was also deliberated by the Kargil Review Committee.⁷¹ Since we are yet not even clear about CDS, theaterised joint commands are a far cry. Hence in the present context it is worthwhile to examine the probability of putting in place a theaterised joint logistics set up to suit the organisational structure as it exist today. In keeping with the principle of economy of effort, specific area where dividends are likely to be high should be the first to be addressed. In case of logistics transformation, transformation at IHQ of MoD level will bring most benefits. This will also address the issue of subsequent phases, pace of change at lower levels and will also enforce that the same is followed in time bound manner. There is also a view that integrated command structure has little to do with the scale of logistics but has a positive effect on efficiency and efficacy of the system.

The most important part of military logistics is the delivery layer or what is referred to as the supplier – consumer interface. The second most important stage is the higher echelon of planning, provisioning, funding, and procurement. Thus, if the parameters of the services desired by the consumer are well defined and sacrosanct, then changes are most desired at the top most echelons. The intermediate stages are more or less influenced by actions at the higher level and by the consumer needs. It will be safe to assume that intermediate changes will evolve automatically once higher stage is modified or addressed. Thus the challenge is to address the centre of the gravity of the issue which effects authorities and

⁷¹ Phadke RV, No 45

planners at the highest level of decision making. The lead agency in this case can only be IDS to obviate the turf issue.

Radical changes in other countries have been achieved by direct political intervention and by legislative provisions only. Thus the challenge and the opportunity lay in sensitising the political masters about this necessary change. Even in case of other countries political leadership would have been informed or sensitized by defence universities, think tanks, task forces etc to take decisive step towards legislation. It certainly cannot be a case of political will alone since there is hardly anyone who does not support it individually. In today's environment it actually boils down to decisive action by the highest decision making body i.e. the Cabinet Committee on Security (CCS), relentlessly pursued by the Defence Minister. Since the bureaucracy has a stake in the turf, it cannot be expected to support the move.

It is hoped that the Naresh Chandra committee will address the issue of a joint logistics setup to some extent while dealing with the question of the integration of the MoD with Service HQ because good logistics is the main pillar of defence preparedness.⁷² The opportunity will also lie in the implementation of the recommendations of this committee.

⁷² Sandeep Dikshit, "High Level Tasks Force to Review Defence Preparedness", *The Hindu*, 22 Jun 2011

VI. RECOMMENDATIONS

There will always be comparisons between logistics models followed by military forces of the developed countries and/or by multinational companies/ agencies vis-à-vis the system followed by our defence forces. The need for an integrated joint logistics setup is not only felt by logisticians, but even by the operational commanders too. The requirement is thus to streamline logistics organisations; introduce best and latest logistics practices and use information technologies to ensure flexible, responsive and focused logistics. For this to happen it will be necessary to overcome the hurdles which have been holding back this transformation process for long. The first and the most important factor required for initiation of desired change is 'Resolve'. In the absence of this important factor we will remain where we are today. For any transformation this resolve will have to come from political leadership of the country. Thereafter the issues need to be well deliberated upon before arriving at appropriate model and followed up with ruthless determination for implementation. However, it does not mean that three Services by themselves cannot implement any changes. Resolve even at individual Service level, when part of overall strategy should be the first step in this direction.

Irrespective of the quantum and direction of change being considered, the lessons from the transformation efforts of other countries need to be kept in mind. Some of the changes or stages which may not have achieved desired results in terms of the laid down objectives need not to be tried. On the contrary change that addresses the most critical area of transformation i.e., preparing military personnel for change, needs to be implemented first with dissemination of appropriate details about the complete process. One way would be to involve all stakeholders in all stages of discussion and analysis and be open to feedback. Thus the three Services need to propagate the idea through various training

institutes and formations and solicit input on the change and also on the methodology of implementation. However, all these discussions should be based on ultimate objective of integration and jointmanship with no going back on the basic decision once taken.

Once theaterised command structures are in place, theaterised joint logistics will be a natural fall out. Which in present environment can only be achieved partially and that too after some concrete proposals are accepted by all stakeholders? Till this happens the first step thus could be integration of logistics within each Service (intra-service integration), followed by establishment of common logistics authority for three Services. Irrespective of the level of the change envisaged, the prescription is for a top down approach. This besides achieving economy of scale also addresses the issue of nodal authority responsible for change. The authorities at the highest level should decide the stages and pace of changes at subsequent levels and should have a fixed mandate of implementation in term of time and restructuring. In the current context two scenarios are possible: one is transformation at the national level through political initiative and the second is transformation in absence of it. Thus in the existing scenario theaterised joint logistics in its true form does not look possible in its entirety. Most of the changes recommended will entail changes in the existing organisational setup and will therefore require government approvals.

Recommended Changes in Existing Scenario

At Service HQ Level

The most important aspect that needs to be addressed at service HQ level is to prepare organisation for change with involvement of all stakeholders. This would require clearly defined objectives and a robust feedback system.

The three Services need to structure their different logistics agencies under one umbrella of 'logistics'. This would mean that a single agency coordinates all aspects of logistics: combat service support, material management, maintenance support, medical support,

habitation and related engineering support etc, under single head other than the chief of the service at the apex level. The critical aspect of this process would involve a thorough analysis of its impact on the aspirations of personnel, dilution of authority of certain appointments, regimental affiliations, phasing, training and personnel management issues before and during implementation. Thus, means of change also becomes important in this exercise. Logistics head of each Service should be designated as Vice Chief of Logistics, who should be a three star general. In the initial period of first two years, after appointment of separate logistics head, the PSOs responsible for logistics of today should function under the Vice Chief of logistics in each Service. This core groups should first prepare organisation for change and recommend appropriate structures for implementation at the integrated HQ level. The restructuring should be based on a thorough study of all related aspect of organisation including human resource management issues. Issues related to change need to be debated and war gamed in first two years. Thereafter, subsequent changes can be made over next one year at a time, which should preferably be in sync with the financial year. The first phase can also include the re-organisation of integrated HQ of defence which will subsequently effect organisations at lower formations. In the second phase the organisation at theatre level and below can be undertaken. As far as possible the initial restructuring should be carried out without any mandatory manpower reduction being specified, because that itself becomes another turf issue within the Services. This will avoiding an additional hurdle in transformation efforts.

The Vice Chief (logistics) secretariat should include a central services wing which should have a specification and service requirement department, a contract assistance department, legal department, emergency procurement department besides a coordination department. This should provide specialised personnel for specification/ GSQR formulation and for scrutinising contractual documents.

The new officer cadre should be commissioned into the Logistics Corps right from the day the transformation commences. The

issues related to training and employment is thus decided well in advance. After four to five years, once the transformation at Integrated HQ of Defence is completed there will be large pool of officers available in field formations that are ready for change and are free from existing regimental associations. Similarly the training of the existing officer cadre will need to be addressed to achieve desired objective.

At locations where more than one Service has troops stationed, there should be only one service provider for one category of stores. In the initial stages existing organisation could be enhanced by nominated Service to provide support which subsequently could be replaced by tri service agency. The service provider could be from the Service which has major troops and equipment presence in that station or as per a mutually agreeable arrangement.

All new specifications should only be categorised as Joint Service Qualitative requirements (JSQR), even if they are today meant for a single service. This will help Services to proliferate information which can be used for subsequent purchases if considered by other Services.

One cross attachment of officers in the rank of lieutenant colonel/ colonel (equivalent) and another in the rank brigadier /equivalent in case of logistics officers should be made mandatory for consideration to next rank to propagate culture of jointness. This will prove helpful in the subsequent transformation.

Joint training courses for middle level officers with six to ten years service and senior officers, 18 to 24 years service, be conducted for all logistics officers of the three Services till such time joint institutes are put in place.

MoD Level

Co-location of logistics departments at IHQ level of three Services in one geographical area should be effected to facilitate future integration. This will also ensure smoother transition in subsequent phases besides sharing information and reducing processing time.

This will encourage seeking of comments on files and procedures without any time penalty.

The Defence Acquisition Wing should be made responsible all contractual procurement above the authority of Vice Chiefs of Logistics both for capital as well as revenue procurements. All the process after Acceptance of Necessity (AON) stage should be its responsibility till delivery of goods to nodal depots.

Directorate of Standardisation to be mandated to standardise existing inventory within a specific period of five years. Outsourcing to be encouraged and a monitoring committee consisting of the three Vice Chiefs of Logistics to be super imposed to review this process.

The three vice chiefs of logistics should be members of the Defence Procurement Board instead of the three vice chiefs of staff currently. Common use items like rations, clothing, fuel, oil, lubricants, sanitation stores etc, to be provisioned by one agency. This may be facilitated by cross attachment of logistics officers from three Services.

The three Services (including civilian members) could follow a common enrolment and common appraisal systems to ensure smoother transition in times to come.

National Level

There is need to constitute a national task force specifically for streamlining the logistics setup not only for three Services but for the all the security forces of the country to enable them to be cost effective and responsive. The task force should have all stake holders including representatives from respective ministries and be preferably chaired by a minister. In fact the minister of state for defence could chair such a task force that may include some members from reputed think tanks.

The recommendations of the task force should be converted into legislation through Joint Parliament Committee on Defence for implementation. This will also address the issue of government

ordinances for minor changes in the organisations and procedures which is generally felt during implementation.

Recommendations for Stage-II

The desired revolutionary changes will only be possible by the intervention of the political masters. The issue once formalised needs to be legalised through an act of legislation. The logistics departments of the three Services along with Department of Defence Production and Department of Research and Development can be placed under a minister of state for defence for better coordination and efficiency.

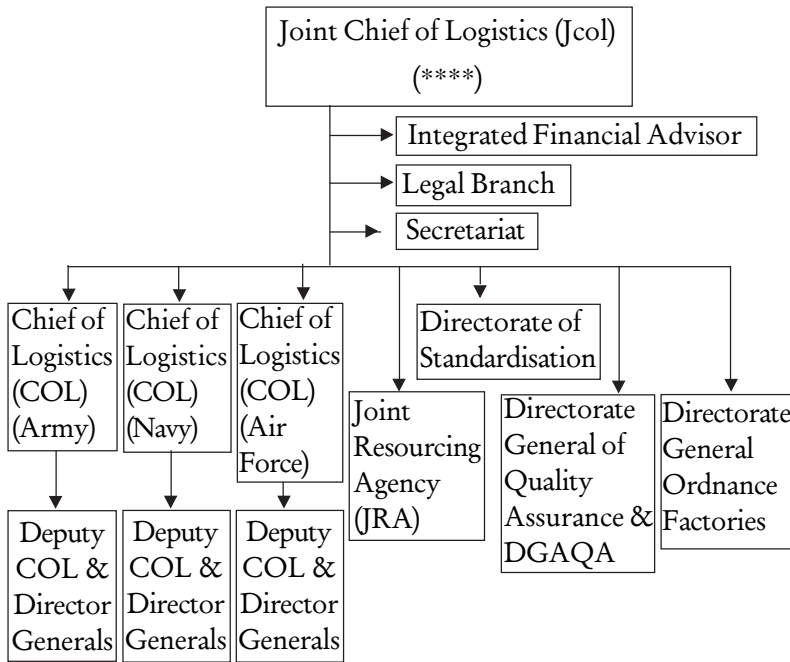
Joint Chief of Logistics (JCOL)

The logistics of the three Services should be placed under the control of JCOL who should be a four star general with each Service being represented by a chief of logistics, three star general equivalent to the vice chief of staff. The respective chiefs of logistics would be under the technical control of JCOL and the functional control of the respective Chiefs of Staff. Till such time the issue of CDS is decided the JCOL could be a member of the chiefs of staff committee. Once the CDS is appointed the JCOL should fall under the control of the CDS. The broad contours of further transformation would remain the same as discussed earlier.

Joint Resourcing Agency (JRA)

The JRA on the lines of the DLA of US and DE&S of UK to be formed and placed under JCOL. This agency should be made responsible for provisioning, procurement and delivery of items up to the nodal depots. The agency also to be responsible from the AON stage till finalisation of contracts and delivery to nodal depots for both for revenue and capital procurements. Outsourcing would be another area of its responsibility.

Directorate of Standardisation, Directorate of Quality Assurance and Director General of Ordnance Factories also to be placed under JCOL for better accountability and efficiency. The recommended organisation for JCOL could be as under:



Regional Hubs

Certain existing depots could be nominated as joint regional hubs based on the requirement of the three Services to provide stocks to units and formations in a defined geographical area. Joint regional hubs should have commodities based depots for rations, clothing, equipment, fuel, electronics, engineer stores, medical stores etc. These joint regional hubs should be under the administrative control of local formation and technical control of JRA.

In the present context the joint theaterised logistics concept is recommended to be implemented only up to the level of joint regional hubs and not up to the theatre or formation level. However, on establishment of theatre commands the process can be extended down to formation level.

National Logistic Council (NLC)

An NLC on the pattern of National Logistic Cell of Pakistan should be set up to coordinate issues with other ministries. The chairman of the NLC could be the minister of state for defence. Its members should be the secretaries of the ministries of finance, surface transport, railways, civil aviation, agriculture, consumer affairs, home, and the Planning Commission besides the JCOL. The council should function as the highest body to coordinate defence requirements including infrastructure development issues - both during exigencies and peace time. The NLC should lay down national logistics objectives incorporating defence logistics needs. It should be responsible for creating and mobilising national resources during the exigencies.

Along with the changes recommended above, there is a need to encourage private industry participation by providing tax and fiscal incentives for a specified period. A dedicated defence SEZ can be created to develop the industrial base. The specifications of common use item should be aligned with market specifications and a level playing field vis-à-vis the OFs and the DPSUs be provided to civil industry.

It is true that organisational changes alone would not bring about the desired results but the beginning has to be made somewhere and the organisational structures are the greatest obstacles to any change. The changes in procedures, accounting, management, disposal and such other parameters are expected to evolve thereafter. Further the culture and paradigm shifts are related to people and the groups involved. The hierarchical system of functioning of Services and government ministries is the basis on which changes should be made. It is further evident from the transformation efforts of other nations that concepts and procedural changes alone could not achieve desired results and the nations were forced to make organisational changes after trying and failing to implement new concepts without appropriate organisational structures.

Any large organisations need to function like a wheel which has many cogs. In our system the focus of each cog, becomes self

perpetuating and too self centric at times to be fully aligned with the overall objective. It is necessary therefore to have organisations where the cogs focus on better accountability, transparency and implementation.

VII. CONCLUSION

It is evident that militaries world over are the same and there is great resistance to change especially when it is transformational in nature. As compared to corporate environment there is a sense of belonging in the military which could be due to regimentation and training. Though there may be resistance to change but the inherent nature of organisation can also facilitates higher pace of change if the management of change is well articulated and structured. The change in the logistics set up not only effects the logistics elements but also the whole hierarchical chain of command and control. If the difference of opinion on matter of CDS between the three Services is any indication than the goal of logistics transformation towards jointness will not be easy to achieve. It will finally devolve on the political class to enforce changes which have been acknowledged to have paid rich dividends, the world over. This is likely to be opposed by the civil bureaucracy along with the military since they may have a vested interest in perpetuating the existing system. Equally important will be management of the change. The selection of the agent of change thus becomes very important. Though difficult but the change must be effected because it will result in huge savings and promote efficiency and transparency.

India is expected to spend more than 100 billion dollars over the next 10 years on defence purchases. It is a generally accepted rule that an efficient acquisition organisation not only expedites procurement but also effects savings of up to 15 percent on the initial purchase price and associated life cycle costs. In absolute terms therefore the savings are huge. A well structured organisation may also be able to put a lid on large number of scams related to kickbacks in defence deals which have had an adverse impact on the procurement of military hardware.

Military logistics is an all encompassing field comprising of facets from design to disposal stage. This coupled with requirement to frequently switch over to newer technologies, with high rate of obsolescence and with functional requirements of high reliability demands tailor made logistics system with appropriate organisational structure and procedures. Since military logistics will always be functioning in a dynamic situation there is need to have an organizational setup which lends itself to such eventuality. Appropriate organization structure is arguably a prerequisite for effective military logistics.

Militaries world over have resisted changes which is evident from the fact that even in advanced militaries like USA and UK changes could be brought about only by political will and were backed by necessary legislation. The most successful and efficient methodology being adopted by modern militaries is a logistics system based on theatre or theaterised logistics. In our case, there has hardly been any serious attempt to modify the logistics system which we inherited from the British. In absence of a strong political will it may not be possible to overhaul our military logistics in totality however some changes are possible at services HQ /MoD level which can become a precursor to futuristic changes. This will bring about more transparency and provide value for money. Thus the monograph presents short term approach and a medium approach to bring in desired changes in our military logistics system after evaluating the need of the hour.



Col Virander Kumar Saini has been working with the Logistics Department of the Indian Army for the last 26 years. He is an alumnus of the National Defence Academy Khadakwasla and the Defence Services Staff College Wellington. He holds MSc degrees in Food Technology and Defence and Strategic Studies from the universities of

Mysore and Madras respectively. He has served with the UN Mission in Lebanon from November 1999 to November 2000. He was Research Fellow at the Institute for Defence Studies and Analyses (IDSA) from June 2011 to June 2012.

Institute for Defence Studies and Analyses

No.1, Development Enclave, Rao Tula Ram Marg,
Delhi Cantt., New Delhi - 110 010
Tel.: (91-11) 2671-7983 Fax: (91-11) 2615 4191
E-mail: contactus@idsa.in Website: <http://www.idsa.in>

