

Joint Logistics: The Way Forward

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Joint logistics is an emerging imperative in the Indian operational context. The author argues that there is a tremendous scope for integration of logistics amongst the three services. A number of areas such as automation of common logistic processes, modes of transportation, certain provisioning and procurement policies and medical services have been identified. There is an urgent need to identify the commonality in processes and practices to initiate the process of jointmanship in the field of military logistics.

Obtaining a superior edge in military capability has been a never ending race in the art of war, leading to the present Revolution In Military Affairs (RMA). Concurrent with the RMA there is a need to have a revolution in logistics to enable the RMA. Without adequate logistics, RMA would be incomplete. If RMA views the battlefield as integrated, interoperable, with real time situational awareness by information fusion, the logistic resources have to be congruent with operations in its capability to position material when required. Pooling of logistics provides a superior edge and is more than a force multiplier. Resources in any organisation are finite and need to be utilised judiciously. The ultimate in logistics support would be a fusion of all national resources for the success of the defence services and not something restricted to military resources. Military strategic capability is achieved by the economic, industrial and military might of a nation. To the lowest war fighter, logistics support must provide real time awareness of assets and assured availability thereby instilling the desired confidence to succeed in his mission.

Post World War and the Gulf War the lesson learnt is that coordinated effort between the armed forces on land sea and air is unavoidable and led to the formation of Joint Staff. The joint staff is responsible for the strategic and tactical planning using the logistic assets of the individual service and the national industry (private and public) to achieve freedom and flexibility of operations. Waging war in the current milieu is logistic driven and it determines the limits of the operational capability. The concept of a network centric warfare have added a totally new dimension to logistics prompting its reengineering. It devolves on the joint staff to adopt a logistics doctrine to

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coordinate these resources. Sound logistics enable effective use of force internally against terrorism and disaster management and externally in out of area contingency situations. With the emerging concept of accepting even out of area contingency as an extension of the primary security concern of a country, the long term vision must encompass an international approach to establish logistic interoperability with cooperating countries in international missions.

The first question is what should be the form of logistics in the Indian context considering the existing infrastructure, organisation and operational requirement? The ultimate would be integrated logistics where all resources of the services are placed under a single organisation seamlessly connected with the commercial supply chain. Of course, this would mean a huge investment and training besides reengineering the organisation. This tinkering of an established system is not without the risk of failure. The tremendous advantage of integrated logistics is the reduction of resources eliminating duplication and waste and cutting costs. Cost cutting is to the tune of a major portion of the defence budget and offers a tempting alternative. Further, an integrated logistic system would need a unified command to prioritise the inter-service requirements. While the IDS has been formed it is without a CDS and hence not fully effective for its designed role. Effective implementation may take place sooner or later depending upon various conditions, but nevertheless the operational requirement of jointness has been understood and accepted. It is therefore logical that the general line of direction for logistics to evolve is clear and (eventually) as the CDS progresses, must keep pace with it. This will not take place overnight or even in the short time since it involves changes in organisation, infrastructure, functional processes and supply chains. The process is a gradual osmosis, incremental and gathers strength as it progresses. The decision on the type of logistic organisation has to be taken considering the Indian context, resources available, priority of reorganisation and the operational requirement of the Indian defence forces. A drastic change is definitely not recommended as it is a sure recipe for disaster. The choice is between establishing an Integrated Logistic System like that of the United States (US) or a system of Joint Logistics which evolves concurrently as the process of establishing a CDS progresses and theatre commands are formed.

Due to the necessary prerequisites of establishing an integrated system, integrated logistics may not be a near term solution but for the interim a modified version would be more desirable. The existing conditions, imperatives of operational requirements and experience of other countries are a fair indication to suggest a system where resources may be shared or in other words joint logistics. An important factor against integrated logistics is the experience in Iraq where the lapse in logistic doctrine of US revealed a weakness in allocating priority in joint operations where each service attempts to support its own being detriment to the larger operational plan. It would therefore be prudent to start with joint logistic and improve upon it as

we progress. In fact, if certain pivotal and common functions of logistics were to be brought on a common platform and pre-positioned it would assist in the early implementation of the theatre commands. The contradiction is that while at the macro level there is a need to conserve scarce resources by sharing and cost cutting, at the micro or executive level, the need is to decentralise and place resources under the force commander. Herein lays the challenge to logistic organisation and support and the need to adopt a system that meets both requirements.

The existing logistics system has evolved from the World War era in support of conventional warfare and to give due credit it has been effective in the past. The support and accounting system in use by the defence services is a legacy of the colonial era. It evolved over a period of more than a hundred years after Lord Nelson achieved total superiority over the French Navy. These procedures are foolproof to the extent that every situation is adequately covered and spelt out clearly in writing. The responsibility and chain of command and financial powers are unambiguous making implementation easy. The shortcoming is that it does not include finance, manpower, transportation and accommodation which are dealt with as a separate issue and yet contribute to the cost of maintaining the inventory. Further each operation is designed to be carried out in-house and the concept of outsourcing as a cost saving measure is alien to it, since this is a product of modern technology and industrialisation. Barring ammunition support, the complete logistics is generally organised on the pull model with frequent delays in demand and supply, a luxury that may not be affordable in the current scenario. The system has served us well in the past but a manual system in an era of fast communication and short wars has become marginalised. This has resulted in dissatisfaction with the logistic support especially during critical times causing the field commanders to vent their feeling of inadequacy due to the shortfall in material support or transport.

Economically the sheer volume and cost of defence related goods make each aspect of logistics a cost centre where a marginal difference result in savings or loss of millions of rupees, even the disposal of scrap runs into millions. This is the incentive for synergising existing individual systems into joint logistics. The other reason is achieving what the US army calls 'the unity of effort' meaning it is the coordinated application of all logistics capabilities focused on the Joint force Commander's intent, and it is the most critical of all joint logistics outcomes. Achieving unity of effort requires the optimal integration of joint, multinational, inter-agency, and non-governmental logistics capabilities. The three Services have their individual logistics systems which have areas of commonality which are potential areas of cost reduction if correctly channelised. This paper attempts to identify these areas. The subject is too vast to arrive at final conclusions for which detailed examination would be necessary and the following is a professional view. The aim here is to establish the need to examine our options for future course of action for effective logistics in support of emerging patterns of military operations.

Organisation of logistics is not a one-stop shop and has a multitude of agencies contributing to its success or failure. Therefore, logistics to support joint operations need to be examined holistically covering manpower, organisation, control, transportation, procurement, warehousing, supply-chain, distribution, automation, networks, training, audit and disposal. Each of these areas is a system by itself with inbuilt strength and weakness. While resources flow from rear to the forward in a battle zone on the flipside evacuation of casualties is carried out in returning transport so medical services have to be factored in.

Organisation and Control

The organisation and control for joint logistics must be able to coordinate the use of Individual Service assets in operations and also to coordinate other resources of the country.

At the level of the Services, the organisation of joint logistics has to encompass the existing resources of each service as they are. The organisational structure will have to be modified so that they facilitate deployment of resources smoothly in support of joint operations. This would require standard functional process and forms used in routine work. It would need a standardised dictionary of 'Terms and Abbreviations'. The organisational structure will also have to be standardised as far as possible including the nomenclature of the appointments and their responsibility to facilitate easy understanding of the system across the services. This does not include exceptions which are unavoidable but not detrimental to the larger aim. Most important a culture has to be inbuilt where allocation of resources to the other services must be routine and executed at the lowest level rather than something special requiring multi approval/concurrence.

At the level of CDS the Op logistics directorate is responsible to coordinate the planning and distribution of resources for joint operations and lay priority. While capital acquisition of the services is being coordinated by HQ IDS the vetting of common use items of the services could be also addressed by them. This would require a detailed study to work out the mechanism based on integrated inventory control of the services over a common network. This would not only help reduce common inventory but afford flexibility on the use of resources so important for joint logistics.

At the national level, there is a need to establish an agency to supplement joint logistics and coordinate efforts to develop the Defence Industrial Base (DIB) supplementary to the defence supply chain. They would be responsible to coordinate the present and emerging needs of the defence forces with private Industry, PSU's and ministry of commerce and industry in terms of production, R&D and exports. They will also be required to coordinate with other

ministries like food and agriculture, science and technology and communication to sensitise them to the needs of the defence forces in order to prepare for total synergy of the government machinery during war. This office could make recommendations for legislation, on policy changes, facilities, protection to companies manufacturing critical items and tax concessions to those areas that contribute to national self-reliance in defence and promote the DIB.

At the operational level, the mission specific resources will have to be placed at the disposal of the formation commander. While the Op logistics at HQ IDS will do so, there must be complete visibility of the resources available to them for fast decision making. The process has to be routine rather than special. Thus it is envisaged that each brigade group or combat command will be provided logistic resources required to be drawn from any service imparting them self-reliance and high mobility. While joint logistics is theoretically easy, practical implementation is another story. In a joint service scenario, it would require planning and rehearsals to streamline the functioning as also to highlight the shortcomings. A gradual step-by-step approach would be practical and will prevent confusion. In the Indian context, this can be tried out in joint exercises. Military institutions may be required to be modified as mentioned above to make the process efficient. The most important facet of joint logistics is the common head of the force who will decide on inter and intra service priority critical to the mission. Once this arbitrator is in place and approvals accorded by HQ IDS the mission commander should be given independence of command over the allocated resources.

Automation and Networks

The aim of automation is to establish domain-wide visibility, which is the ability to see the requirements, resources and capabilities across the joint logistics domain. Three fundamental enablers frame the ability i.e. standard database, connectivity and a global focus, in an operational sense.

Database is the foundation of any automated system and a reliable database is the first requirement of inventory control. The resources are therefore required to be organised on a common database across the three services. A common database highlights the importance of standardisation across the services. While the process of standardisation is underway, its progress is too slow. The NATO codification system of a 13-digit code has been adopted by the services. At present, there are about 26 lakh items in the inventory and large sums of money are being spent unwittingly when stocks are already held under a different part number or name. There is a need to make it more dynamic by establishing a node at each large stock holding depot of the services to codify the complete inventory at the earliest. There are 56 countries who have adopted this system including India at one level or another, in the long run this would facilitate inter-service inventory control.

Exploitation of inter-service as well as intra-service resources are only possible with good networks using standard software. In any large organisation, the software is common and compatible across all functions. This ensures complete transparency of data vertically as well as horizontally. The army has taken steps to automate the inventory functions. The navy and air force being smaller in size have been implemented. Inexplicably all three Services are developing their own models whereas all experience and logic would recommend a unified software. Even if this were not possible, at least an interface between them should have been established. It does not need clairvoyance to visualise the advantages of a common logistic-software and network. This will facilitate inventory control by way of eliminating duplicity, reduction in holding of common items and flexibility to shift resources. It would also facilitate common training and development on the software to function under diverse operational conditions. It will lead to shared awareness, common measure of performance and asset visibility across the three services. The lack of asset visibility in Iraq by the US forces caused 28,000 containers out of 41000 shipped to be opened to ascertain what it contained. In an environment of a common network not only is availability known but the stage where the indent has reached can be ascertained, permitting planning by the operational commander.

Joint logistics depend upon a sound and networked inventory control system. The system becomes effective if it can facilitate exploitation of the supply chain as a back-end function. The supply chain extends to the manufacturers and vendors both in the country and abroad. In order to streamline this globally the process of standardisation has been adopted. Thus, the focus of joint logistics assumes a wider coverage. In an era of fast developing technology and faster rate of obsolescence, a global focus cannot be avoided and will as a matter of necessity have to be factored in the design of joint logistics.

Transportation

Transportation is a resource common in nature to all services it entails move of men and material by land, sea or air to accomplish a mission. This has to be inbuilt in the organisation for the combat troops. In a single service defence organisation availing of transport cannot be taken for granted and until provided, is uncertain. While the air and sea transport would be under the operational command of the respective service land transport can be on a common platform. Land transport can be provided from own resources or outsourced. It can be placed under a single service in a station or theatre of command for obtaining better terms. Whatever may be the circumstances all transport resources have to be placed under the operational commander for speed and efficiency of operations. This will facilitate smooth carriage of men and material for combat and evacuation of casualties. The army has moved towards hiring civil transport (CHT) considerably enhancing logistics capability and service contracts can be standardised along with default

clause and alternative arrangements in case of failure of the contract. The complete system of transportation of materials needs to be further changed to the use of compact pallets for air transportation and containers for road/rail transport. Load tables can be standardised for containers and vehicles. Infrastructure for handling of compact loads has to be built up for optimum mobility and exploitation of transport, at least in the major and medium stations and ports or even shared with existing civil organisations like Container Corporation or Railways. Once the logistics support is converted to the push model using automated inventory control exploitation of container service would be further facilitated. SOP's need to be formed to allocate air and sea transport smoothly.

Procurement, Warehousing and Distribution

Capital procurement at the apex level has been centralised in order to achieve synergy of effort and obvious advantages accrued due to centralised purchase. The Defence Procurement Procedure (DPP) 2008 has been formed; its efficacy is yet to be fully assessed. For joint logistics, revenue procurement is of greater relevance as it deals with the material support to operations. Further, it includes items in use that are common to the Services. The defence purchase manual (DPM) 2008 has been formed and is being implemented. Coordinating the revenue expenditure in the current situation may prove to be difficult considering that there are approximately 26 lakh items in service. A more pragmatic approach would be to identify the inventory at two levels first at the main equipment level where it is in use by more than one service like guns, vehicles, etc. at the second level should be common items consisting of sub-assemblies that are critical for functioning of main equipment. On an integrated and in a fully automated system it should become possible to review these items and rationalise their holdings across the services to some extent and at the least achieve flexibility of shifting resources in an emergency so that joint operations are not hindered. The organisational strength in the background that needs to be built is not holding of large stocks but a responsive and quick system of procurement so that resources are available when required.

An extremely important facet of procurement well understood in the corporate sector is the establishing of a sound supply chain management (SCM) for assured supplies at competitive costs. Although the subject is slightly out of context with joint logistics it falls in the area of interest and has to be promoted at the highest level as it directly impinges on the availability of materials. This is ignored in the defence services due to their dogma on following the legacy procedures and the L1 system. A supply chain has to have the main characteristics of being fast, reliable and be on time. Until the L1 system continues to be sacrosanct, an effective supply chain cannot be developed. The problem however is not insurmountable. A supply chain can be a cost reduction measures as well a force-multiplier. Efficiency in SCM and establishing joint logistics will reduce the level

of revenue expenditure in the defence budget permitting greater availability of resourced for modernisation and capital expenditure.

Warehousing is a major but unnoticed cost centre, where expenditure can be reduced. It can be combined to exploit scarce real estate and storage space, especially for ammunition. It would require a platform of uniform procedures, staff-work and forms. Since the accounting and audit systems for materials in the defence services are common it would not pose a major problem to store inter services items in one location. Minor adjustments may be required to meet service specific needs. Specific locations have to be decided on case-to-case basis. This will be preceded with changes in the command and control to standardise them as discussed above.

Distribution of materials on the push model using assured transportation would bring the process closer to the 'just in time' inventory concept or 'when required' and reducing cost of holding. Distribution management needs to be streamlined on the transportation model. The system of central stocking and then further distribution needs to be refined. The onus of holding stocks needs to be shifted on to the supplier (from private and public sector) and to exploit his existing distribution network as far as possible. In a joint logistics concept, the responsibility of positioning stocks must be with the higher HQ (Push model) who have complete visibility of the stocks held and have the authority to set priority. The lower operational units are not encumbered with the indenting process but merely have to record the consumption as it occurs online using the dedicated network. This is likely to instil the confidence in the logistics system and free the operational units from administrative work. Thus in a joint operation the logistics support would need minimum staff approvals and intervention thereby reducing the time lag and enhancing mobility of forces.

Medical

While all logistic efforts are focused on providing the right item at the right place and at the right time on the flipside it entails evacuation of casualties on the return trip. The paradox is that medical services are common to the services but they have no control over their functioning. The organisational structure of the medical services for the defence forces is based on the BC Roy report commissioned in 1947. The committee submitted its interim report and could not submit its final recommendations as the chairperson had to proceed to Calcutta to assume the office of Chief Minister. The committee chairperson intimated that their interim report be taken as final. The environment and expectations have undergone much change since 1947. Availability of medical officers has increased considerably as well as the availability of concurrent medical resources in the civil sector across the country. The need of the day is for a medical service fully integrated in support of the services using all resources for speedy evacuation and treatment of casualties. Joint logistics would entail positioning of medical units at nodal points along with requisite

staff. Necessary medical supplies and biomedical equipment would have to be positioned and replenished regularly. The positioning of medical supplies is required to be done on the same priority as ammunition since it affects the morale of the combat troops. In order to achieve the same a medical supply chain with its special needs of biomedical items, date sensitive medicines and alternative drugs, needs to be established.

Training

All training establishments where joint training is carried out have been placed under the IDS. Training on logistic still remains service centric. In the corporate sector, inventory is held for production or sales in order to generate profit. In the defence sector, inventory is held for production and consumption but as insurance (reserves) since large portions of it do not have a civil end use. This is the fundamental difference and causes a different approach to procurement and holding levels. This requires specialised training to maintain the system.

Joint operations envisage joint logistics to support them, i.e. while the individual service continues to organise, equip and train its personnel it must be geared to support joint operations. Rudimentary knowledge of functioning of the services reveals this to be an extremely complicated process beset with red tape and zealous protection of resources and multi layers of approvals before issues are made. While this state may not change other factors, facilitating joint logistics can be positioned. These fall in the area of standard logistic organisations, training, procedures and terms and abbreviations. This will promote a smooth dialogue and transactions at the work level where resources are decentralised for the period of operations. To achieve this, respective training establishments need to be brought under the IDS umbrella. This will enable a uniform system of basic training for logistics and inventory control, accounting and audit. Thereafter specialised training can be branched off to cater for service specific conditions, knowledge of operations and equipment functioning to avoid mismatch at the operational end. Since the basic principles and concept of inventory control and audit are similar, there is substance in the suggestion that this training can be combined. This will facilitate interoperability across each service. It also establishes personal understanding and trust at the work level, so important in joint operations.

The principles of logistics are simple but as the scale of operations increase, the complexities too increase exponentially, requiring special skills in its associated parts. If joint logistics is required in support of joint operations, a common platform of software, organisation, cataloguing and warehousing would have to be adopted. In logistics, incremental improvement/reorganization is always advised, therefore as a first step joint training can be started before the organisation structure and finally the command structure is integrated.

Factors having Indirect Effect on Joint Logistics

There are other factors that have an indirect effect on the functioning of logistics these are briefly discussed below:

Audit: While the subject of Audit appears to be unconnected with joint logistics, its importance to enhance the system efficiency will become apparent shortly. The system of audit is an unavoidable responsibility that has to be managed. The audit system has not kept pace with automation and need to be integrated as part of it. The concept of audit will have to undergo a change from periodic review to online monitoring and shooting of a mail in case of an aberration or better still blocking the transaction ab initio. Most important, audit will now have to shift focus from monitoring the procedural aspect (which would not be deviated in any case after automation) but to carry out analysis on cutting costs using past data, pinpoint redundancies and highlight delays. Recommendations on stocking levels and decentralisation to reduce transport cost can be made on case-to-case basis without being tied down with the plea of procedural deviation. It can be an efficiency contributing factor rather than a police-work. For instance, audit could recommend sourcing of a critical item from a single source if satisfied of all aspects in the national interest. It could recommend a higher level of purchase if it were proved that it would result in a saving to the state. The Financial advisor (FA) could render advice on case-to-case basis where market conditions could be exploited within the overall financial prudence thus imparting flexibility to the system. The only pre-requisite being that the FA be made equally responsible (or culpable) as the authority exercising the financial powers. The audit process across each service would be uniform enabling flexibility and economy of audit resources. It would also enrich their experience of audit under varied conditions thereby enabling the refinement of the system. With a common audit and financial advisor in place there are likely to be a minimum of procedural bottlenecks leading to smooth joint logistics.

Disposal: Disposal is an area often ignored but never the less occupies the extreme end of logistics. Though unconnected with joint logistics, it assists in releasing capital blocked unnecessarily. The army incidentally is holding obsolescent inventory of Rs. 400 million and the Navy almost twice that amount and these are conservative figures. Since the function of disposal is uniform, a special disposal committee has been formed. Large amount of waste is generated by the armed forces. In addition, large number of equipment become obsolete due to advance in technology and has to be discarded. These items being government property have to be stored and accounted for and occupy space and falls in the category of blocked capital. Good logistics demand their early disposal by auction as scrap, exports or other means to get best advantage to the state, thus maximising opportunity cost. The need is to rejuvenate the existing system.

Conclusion

The concept of joint warfare has been introduced in the defence services recently and is yet low on the learning curve. The implementation was not a result of planning but a result of a rude shock after the Kargil war. The group of ministers reported the urgent need to integrate the three Services under a combined defence staff (CDS). Acceptance of the concept has been reluctant across the bureaucracy and services and minimum resources have been provided. The positive aspect is that the process has started to roll and will eventually come into being since there is no alternative for a fast developing country that needs to protect its interests in a volatile neighbourhood. All aspects of joint warfare need to be debated and implemented including logistics. Pooling of resources is an important step forward and falls under the domain of joint logistics. Once implemented it would provide the armed forces the capability to achieve the national aim. 