

# TOTAL ASSET VISIBILITY

by Captains Jessica Miksa and Dave Carlson

## Introduction

Total Asset Visibility (TAV) has received much recent attention, as logistical efforts are focused increasingly upon the provision of swift, uninterrupted support to combatants. Fiscal constraints have forced the Canadian Forces (CF) to abandon the policy of maintaining excess supplies in the event they were required, and, as such, have now moved towards the provision of services *when and where* required. With the operational environment rapidly becoming increasingly uncertain, it is absolutely critical that materiel for operations is fully tracked, so as to increase the visibility of supplies and materiel, thereby leading to improved readiness in the field of operations.

## The Challenge

The monitoring and managing of widely dispersed assets, for which information exists in various formats and systems, has become more and more difficult, as the CF has become acutely aware of the need for rapid deployments. One of the major problems faced during military deployments has been the inability to monitor requisitioned assets, from their initial acquisition through the supply chain, to their arrival in theatre. This lack of an ability to maintain control of assets resulted in a failure within the logistical system that translated into a loss of confidence on the part of the end-users. The result was that specific items were ordered *repeatedly* in the hope that, eventually, the ordered equipment would arrive. This method of trying to ensure that supplies and equipment were available in a timely fashion proved, ultimately, to be wasteful of resources. And, as procurement costs increased, thereby requiring purchasing authority through Public Works and Government Services Canada (PWGSC), the system became congested with unnecessary supplies. Therefore, a policy known as Defence Total Asset Visibility (DTAV) was developed and implemented for the CF as a means of monitoring the movement and location of requisitioned equipment. However, DTAV still does not meet all the requirements of a supply technician or a traffic technician for requisite moment-to-moment tracking, and for reporting to a chain of command that is perpetually hungry for information. Therefore, a more reliable system needs developmental refinement in order to bridge the gap.

Logistics is a command function by virtue of its significant involvement with the operational sphere. Every necessity required for the success of an operation is provided through the supply chain, and asset visibility allows commanders to determine whether supplies and equipment are available in sufficient quantities to sustain operations. This function is essential, since operational success is based upon what *is* and *is not* available, and what *can* and *cannot*

be provided logistically. Conversely, unless the supply system is advised by operational commanders of their requirements by means of feedback on usage, actual or perceived, that system will not be able to respond or adapt in order to fill needs. In this case, the performance of logisticians will be diminished, and consumers will be dissatisfied. It is imperative, therefore, that the end-users, whether operational or not, keep the supply system informed of their requirements and usage, so that, in turn, the supply system can work to ensure that those requirements are met, either from in-stock items or new purchases, or from external contracting. In theatre, replenishment is vital for the sustainment of operations. Therefore, it is essential that information on materiel requirements and the availability/non-availability of supplies and equipment is passed rapidly, so that replenishment of low inventories can be attained in a timely manner.

In order to endeavour to provide the best logistical support possible to operations in theatre, the *concept* of DTAV was developed as a means of ensuring that requisitioned supplies are tracked, from purchase to delivery, with the consequent supplying of goods to theatre effectively and efficiently. In *theory*, DTAV delivers the ability to provide accurate and timely information to end-users on the location of their requisition at any given time, whether this is applicable to supplies, equipment, or personnel. In *effect*, much like the training system, DTAV offers a systems approach to requisitioning and supplying the customer, ensuring that the right amount of inventory is available in a timely manner for minimum cost. This 'systems approach' is a response not only to an inefficient and ineffective supply mechanism, but it addresses the fiscal constraints placed upon the CF in the past. However, as mentioned previously, although DTAV has addressed some of the issues experienced in the older supply system, it still needs some improvements to meet the requirements of an operational theatre located halfway around the world.

With the implementation of a better TAV system, it is essential that the supply process become more streamlined, with a concomitant need to employ technology in order to monitor the progress of supplies, from the initial purchase to the end-user. The use of technology to automate the supply tracking process provides both the logistics branch and the requesting customers with an efficient and effective means of managing the assets for which they are jointly responsible. However, in order to achieve the best possible result through automation, it is essential that all those concerned with the supply system have access to properly established databases through which to monitor the progress of requisitioned supplies. This, indisputably, will be no small matter, especially if units do not share similar technology.

## VIEWS AND OPINIONS

The DND/CF operational mandate has undergone a dramatic change in the past few years, and rapid deployments to various theatres have necessitated a transformation of the supply system in order to ensure that military operations are sustained. This means that logisticians must be able to track the movement of supplies, equipment, and manpower throughout an entire deployment, to ensure that commanders in theatre have the required materiel made available to them to perform their mandated tasks successfully. Lessons learned from Joint Task Force Afghanistan Rotation 2 (JTF-AFG R2), *Operation Medusa*, have proven that materiel requirements are rapidly prone to change, based upon an operational directive. Therefore, planned operations may, indeed, depend upon the timely requisition and delivery of vital materiel. So as to maintain absolute visibility over High Priority Requisitions (HPR), the in-theatre supply and movements sections become engaged in equipment tracking processes, subsequently providing situational reports to the commander. Unfortunately, once a demand is imputed into the system, visibility with respect to its movement cannot be established until a waybill is created, and then, through the National Material Distribution System (NMDS), once in-transit, the materiel can then be tracked.

### The Response

So as to maintain asset visibility, and to provide timely and accurate updates on the movement of equipment from Canada to theatre, the Director General Materiel Systems and Supply Chain (DGMSSC) has instituted a CF/DND-wide asset tracking capability plan to ensure that the availability of supplies, equipment, and manpower is transparent to operational commanders, irrespective of their location. Part of the TAV plan is to investigate the use of Radio Frequency Identification (RFID) technology designed to reduce shipment handling and manual efforts to reduce consignments. The project is directed toward the creation of better interoperability between the CF and allied forces in theatres of operation, by allowing commanders to make timely decisions in theatre with regard to the availability and usability of various resources.

From a theatre perspective, visibility is lost when freight is positioned at an in-transit terminal or airhead, due to competing priorities of freight, coupled with limited airframe availability. As freight is positioned for movement, determination must be made as to which aircraft will transport the high priority items. Time is often the deciding factor between mission success and failure. Thus, aircraft in-transit visibility is imperative. The institution of automated tracking systems, where the aircraft registers its location through the passage of a receptor node, may provide the level of visibility required by command. Similarly, the movement of sea containers via a partial overland route proves challenging with respect to visibility.

For example, theatre is notified when a ship departs Montreal, and it is subsequently provided with an update upon the ship's arrival in Pakistan. Upon its departure from Pakistan via the overland portion of the route, however, the visibility of the assets is normally lost, leaving behind speculation as to the potential date of arrival of essential stores.

In-transit visibility and the tracking and monitoring of material shipments, have become a daily occurrence for JTF-AFG Rotation 2. The ability to provide a task force with accurate and current information on both the location and status of kit and equipment is imperative to the conduct of operations. Support plans are designed through the incorporation and anticipation of materiel delivery, and as such, precise information must be readily available. The need for improved in-transit asset visibility should be given equal weight with other CF initiatives, since, without accurate and precise asset visibility, a further dimension of complexity impedes command, planning, and overall operational effectiveness.

### Conclusion

Clearly, the ability of the theatre supply chain to provide the required logistical support to the conduct of operations is paramount. As such, Total Asset Visibility (TAV) has garnered increased attention as logistical efforts have become focused upon the provision of rapid, incessant support to battlefield operations. Fiscal constraints have forced the army to abandon the policy of maintaining excess supplies, 'just in case' they might be needed, and, instead, to adopt a policy of providing just enough supplies at the right time and the right place. To execute this new policy and to ensure proper logistical support, TAV systems and procedures must be refined. The full implementation of TAV will ensure that customer service is improved by the delivery of essential supplies and equipment in a timely manner. Further, this system will enable the supplies and equipment to be monitored, from the time they are ordered until delivery. This surely can only be an improvement over the current outdated system, which is not designed to streamline acquisition and delivery through the supply chain, thereby forcing customers to search through numerous sea containers to discover what supplies are inside. The successful implementation and integration of a better TAV system will be a challenging process – one that requires significant changes in materiel, training, leadership, organizations, and doctrine.

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Captain Miksa and Captain Carlson, a supply officer and a movements officer respectively, are both currently posted to 2 Service Battalion at CFB Petawawa, after having served recently as officers of the National Support Element, Rotation 2, of Operation Athena in Afghanistan.