

Military Education and Training Programs: The U.S. Merchant Marine Academy Experience

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This presentation will focus on a domain that is generally not very well understood, specifically, defense transportation and the education and training related to it. It will provide a quick overview of historical characteristics and organizational and operational challenges related to defense transportation and its operations, take a look at in-state objectives or plans for the future of the Defense Transportation System (DTS), and provide a summary of military transportation, education, and training programs, with a few representative examples.

Business logistics today is still a relatively young discipline, really having only evolved since the early 1960s and originating in large part from military logistics. There is a long tradition of efficient logistics in the defense environment. It should also be pointed out that it is fashionable in some circles to criticize the military in the context of transportation and its management of transportation. I am not here to defend the military in that context but to point out that there is an important aspect here and that is the cost of failure in defense logistics and transportation, which is very different than it typically is in the business environment. In the business environment, if the parcel does not get there on time or the container goes missing, a job may be lost or a customer's goodwill lost. In the military environment, you are talking about possible loss of life or serious injury or the failure of a campaign.

Among the historical characteristics of the DTS, one of the challenges includes fragmentation, that is, an orientation among different services, a functional syllogism and division by mode, a modal orientation that until re-

cently has precluded effective integration. From the 1940s until 1986, the DTS was managed by the Secretary of the Army, the Secretary of the Navy, and the Secretary of the Air Force. It was not until 1987 that the U.S. Transportation Command (USTRANSCOM) was activated with a view toward integration. However, it was not until the Gulf War, in which it was recognized that there were some serious problems with failure of information to flow and integration of the managers (the components being the Military Traffic Management Command, the Air Mobility Command, and the Military Sealift Command), that full authority was given to USTRANSCOM to coordinate defense transportation among these agencies. USTRANSCOM became the single manager of the DTS.

Other problems include bureaucracy, customers having to deal with multiple organizations within the DTS, and redundancy in terms of automated systems. Currently, about 150 different automated transportation management systems exist in the DTS and about 380 different financial management systems; clearly there is redundancy that could be consolidated.

Because of the need to provide readiness and support for combat operations, there has been some tendency to provide what is termed "just-in-case" inventory, meaning an excess of inventory so that stockpiles are available to fight the war in a particular theater. Such an approach, however, incurs high costs, and the military today has been looking at alternatives. It is generally not recognized that if there are stockpiles of inventory in the theater, combat forces often have to be diverted to defend those stockpiles, which can slow the

build-up in a conflict and cause major problems. Therefore, defending inventory becomes an issue. The high inventory levels also result in high overhead and system duplication. Lack of flexibility has also been an issue, the failure of integration among command and control systems.

Many of you are familiar with in-transit visibility (ITV)—knowing where cargo is, in particular as it moves through the supply chain. But in the military context, that includes not just goods in transit but equipment and material in general. Total asset visibility (TAV) is knowing where everything is on the battlefield—knowing where all your personnel are, your tanks, and so forth, which obviously requires real-time information and integrated information systems.

USTRANSCOM is trying to alleviate these problems and has developed a very cohesive and coherent plan called DTS-2010, which has a number of important themes and objectives. One of these is a customer focus—a streamlined and flexible defense transportation system that responds to the needs of vendors and customers in the field, time-definite transportation services. USTRANSCOM has established the USTRANSCOM Business Center to facilitate this customer service with a focus on intermodal transportation.

The Joint Mobility Control Group (JMCG) is intended to integrate traffic management functions within the military. In C4 Integration, the four C's are command, control, communications, and computer systems. The idea is to integrate all of these so that they interface effectively to provide the necessary real-time information on traffic movement, in-transit cargoes, and so on.

Intermodalism is receiving an increasingly important emphasis within DOD and the DTS. A number of exercises have been held involving intermodal commercial carriers—the TurboCAD exercise, for example, which dealt with containerized ammunition distribution. The plan focuses on partnerships, alliances between military traffic managers and their civilian counterparts, recognizing the heavy use of commercial carriers in the DTS.

Empowerment refers to decentralization of authority to some degree, to giving the local DTS agents—the people who are actually in the field serving the customer—greater authority, better training, and the autonomy to do what needs to be done.

Acquisition reform is a key part of empowerment. The Single Integrated Procurement System (SIPS) involves electronic data interchange connectivity and access to commercial capability and has a great deal to do with streamlining procurement and contracting for transportation services.

Finally, seamless handoffs here involve a “fort-to-fox-hole” concept, which means that the delivery system should be transparent to those in the theater and should not pose a problem for a war-fighting effort. In this con-

text, USTRANSCOM is the single port manager in a distant theater.

Having said where defense transportation is and where it is trying to go, let me tell you what a representative sample of military schools, organizations, and institutions is doing with respect to education in the context of intermodal transportation. The guiding principle is the Operational Plans and Interoperability Directorate of the Joint Chiefs of Staff. They do not train, per se, but they are responsible for policy programs and analysis of military education issues. They make a statement about what kind of training and education military officers will need to be successful in the future. They talk about the need to be able to think creatively, reason critically, and act decisively in the face of ambiguity and uncertainty. They also emphasize the importance of jointness, that is, bringing the services together to accomplish the mission effectively.

The Air Force Institute of Technology (AFIT) has a graduate program in the School of Logistics and Acquisition Management. The AFIT transportation management program focuses on developing an understanding of defense in private-sector transportation systems among its students; enhancing their managerial skills, both qualitative and quantitative; enabling students to analyze the impact of defense transportation on defense logistics; and so on.

The Naval Postgraduate School in Monterey, California, offers, in the Department of Systems Management, an M.S. in management, and they have curricula in transportation and logistics management.

The U.S. Army Transportation Center at Fort Eustis, Virginia, trains the Transportation Corps to meet the worldwide mission of the Army active, reserve, DOD, and civilian transportation managers, and even allies from abroad. They have courses in watercraft operations, marine terminal operations, rail operations, strategic deployment, and others. They also develop advanced concepts and doctrine related to transportation management.

The U.S. Naval War College has four resident colleges and one continuing education college; the basic focus here is to enhance student decision-making ability in naval and joint operations. There is a center for research and gaming that deals with advanced strategic and war-fighting concepts; one of the more interesting courses deals with joint maritime operations, which has a very intermodal focus.

The National Defense University, through the Industrial College of the Armed Forces in Washington, D.C., offers a 9-month course that has to do with military transportation.

The U.S. Merchant Marine Academy (USMMA) is rather different from the others in that it is under the U.S. Department of Transportation rather than the

DOD. However, we wear two hats in the sense that we graduate midshipmen who, if they do not go into the active duty military, are in the Naval Reserve, and many of them end up in senior positions in commercial industries and in transportation management, intermodalism, and logistics. We are developing a new major in logistics and intermodal transportation. However, logistics and transportation have been a part of our business core for some years.

The research emphasis on intermodalism and logistics has also been revitalized with the creation of a new institute. The USMMA is an active participant in the Garrett A. Morgan program and part of a number of collaborative agreements and cooperative arrangements with the Research and Special Programs Administration, the National Highway Institute, and others.

An informal survey was conducted at Kings Point on continuing education in maritime schools. Some interesting results came out of this survey. Of the seven schools contacted, only one, the Great Lakes Maritime Academy, does not have a continuing education program.

When we talk about continuing education itself in terms of professional mariner courses, breaking it down by courses related to the deck or the engine, the deck had six programs, whereas the engine had four. With respect to transportation courses, of the seven schools, only two had some kind of a technical or transportation course associated with intermodalism.

Looking at the frequency with which these courses are offered, there is a mixture of regular and irregular

courses. The average number of students per course is about eight. The clients that these courses serve are basically in the commercial sector, although the continuing education program at Kings Point does also serve the federal government (U.S. Department of Transportation and DOD), as well as state governments.

There is an interesting quote from Paul Kaminsky, who at the time, in 1995, was Undersecretary for Acquisition and Technology at DOD:

Every logistics dollar spent on outdated systems, inefficient or excess capability, and unneeded inventory is a dollar not available to build, modernize, or maintain war-fighting capability. The remarkable thing that relates to this is that approximately 50% of DOD's budget goes to logistics.

On the basis of that quotation, one could argue that education is a principal means, although not the only means, by which to reduce that expenditure. Certainly, information technology and the application of automated equipment identification (AEI) technology and bar coding are very important. But to have the people in place who can design those systems and can operate them effectively and manage them intelligently is clearly what is needed.

The DOD effort at the moment to integrate the DTS could be summarized as a very forward-looking one, one that is heavily emphasizing intermodal transportation. It is a massive and well-thought-out effort to integrate existing redundant and duplicative systems.