

The Impact of CCDoTT's Innovative Work on the Global Transportation System

IMPACT 2003 Keynote Address

Lt. General Kenneth Wykle, USA ret.

September 30, 2003

Greetings from the East Coast and the aftermath of Hurricane Isabel.

I want to commend Mr. Jim Ackerman for his leadership as Chairman of the CCDoTT Advisory Committee. My thanks to him and CCDoTT for the opportunity to speak on the impact of CCDoTT's innovative work on the Global Transportation System.

CCDoTT is relatively young – started in 1995.

Idea to leverage advance transportation technology, including high speed ships and agile ports and terminal systems in solving defense and commercial transportation infrastructure problems.

Also, CCDoTT was to sponsor applied research and development in support of Defense and commercial transportation infrastructure initiatives and provide technology transfer on a dual use bridge between the DOD and commercial industry.

Think about DOD in the 90's - - DS/DS (modular ports), Somalia (one berth), Rowanda (landlocked), Haiti (draft limitations and poor infrastructure) - - differences in ships used and existing transportation infrastructure in each of these countries - - in developed nations you generally have somewhat specialized ships matched to infrastructure - - containers and container berth, Ro/Ro and RoRo berth, BB, etc. DOD requires agile ports to receive and berth many different types of ships often at the same berth.

Bottom Line – CCDoTT was to find ways to reduce the deployment times for US Forces. Examine the processes at the Forts, movement from the Forts to the Ports; Operations in the Terminal, The over ocean movement, Discharge and Terminal Operations in the Overseas Theater, and onward movement to the combat area. This process is also about the same for the end-to-end supply chain; manufacturer, movement to the port, Terminal Operations, over ocean movement, discharge and terminal operations and on to distribution center or retail facility. So if you can leverage technology to deploy forces more quickly you can also move material through the supply chain quicker. Improved terminal operations to reduce dwell time makes a big difference in the supply chain.

CCDoTT began by writing an Operational Concept Document (White Paper) - - describing the process and how agile ports combined with high-speed ships would speed the deployment of forces. CCDoTT conducted literature reviews, and developed and built a Transportation Automated Measurement System (TrAMS) to speed the movement of forces from the forts to the ports. Concurrently meetings and conferences were held in Washington, DC, here in CA, and in shipyards in Alabama to exchange ideas, debate the issues concerning agile ports and high speed ships, deployment, and to accumulate a body of knowledge on these topics.

Over time the emphasis of CCDoTT fell into about 4 buckets:

1. Rapid Deployment - - Those actions that may be taken to speed the movement of Forces from the forts or installations to the ports of embarkation.
2. Agile Ports and Terminal Systems - - Actions to speed movements through the ports and the ability to reconfigure operations to discharge different types of ships.
3. High Speed Ships - - Examine technologies to increase the speed of the ships transporting military equipment - - design, propulsion, National Defense features.

4. C2 and Decision Support Systems. Improve the tools for C2 and quicker decisions - - materiel flowing at a faster pace whether military or commercial requires quicker decisions.

After 9/11 a fifth area - - Security was added. Evaluations of container seals and processes for “stuffing” and moving containers through the transportation system knowing what is in the container and the “life history” of that container movement..

Early Challenges include changing the paradigm - - the way of thinking about deployments and over ocean transportation. Traditional thinking at the time CCDoTT started was that high-speed sealift was not achievable. CCDoTT continued to challenge this thinking and through small research projects on hull design, development of advance water jet propulsion concepts, conferences to debate the issues - - forums for knowledge sharing, and technology demonstrations they started to “sway” the debate to the recognition of the potential for higher speed vessels. Over these last 5 years the impact of CCDoTTs early work has been significant. (Repeat.) The Army and Marine Corps have leased a high speed Australian built vessel and demonstrated its effectiveness in delivering fully combat ready forces in intra theater movements. This vessel can compete with airlift for the intra theater movement of complete units to the combat area ready to fight. Emphasis on compete unit - - not a few airlift sorties. A recent article in the August 2003 issue of the “Proceedings” highlights the Army’s need for Fast Sea Transport. It talks about a ship sized to move a combat battalion at 50 knots. The US Navy is discussing the application of the technology and developing concepts for employing high-speed vessel for littoral combat, littoral combat ships (LCS) – potential missions include maritime intercept operations, counter narcotic operations, maritime escort duties, launch submarine tracking helicopters or special forces support vessels. (Jun 03 “Proceedings”) -

Lockheed Martin, General Dynamics Corporation and Northrop Grumman (the big boys in shipbuilding) are now promoting high-speed vessels for Naval warfare. And there are competing designs - - GD - - Trimaran; NG = single hull made of composite materials. Finally, discussions and debate has begun on the viability of high-speed vessels for Short Sea Shipping. These actions have caused US shipyards to begin to prepare for competing to build the ships - - one Gulf Coast yard is reviewing proposals for a new facility for the mass production of high speed catamarans. The Army has identified money in the POM for the procurement of high speed ships. People are taking notice! CCDoTT has stimulated the thinking about high-speed vessels and their application in both military operations and the commercial industry. Their work has resulted in the studies, and analysis, R&D, and design options for the application of US technology to improve port operations - - design new port operating concepts, point of entry and exit processes, technology infrastructure, container seal technologies and processes, and in the construction of high-speed vessels. A positive aspect of this work is that the projects have been funded by the US Government and the results are often “open source” and therefore available to others.

Requirement: As one looks at the stated US Army requirements for deployment: A Brigade in 24 hours, a Division in 96 hours and 5 Divisions in 30 days to any place in the world - - considering a heavy division weighs 75,000 to 80,000 tons - - changes must be made to achieve the goal - - lighter forces, less demands on the end to end supply chain for sustainment, and faster movement from Fort to Combat Zone, changes are required throughout the deployment system - - agile ports and high-speed vessels are pieces of the system. Again, even though my comments are couched in military terms the concept applies to commercial operations as well.

It is the objective of our combat forces to over match any potential adversary. We want to operate inside his decision cycle - - to act first. This means to see first, shoot first, hit the target every time and from greater range. In essence it is a change in the traditional way of thinking. It is substituting speed for mass. Overmatching an adversary in firepower and capability means speed. Agile Ports, high-speed vessels and improved C2 and decision support tools contribute to the speed of deployment and in sustaining the forces once deployed. This same thinking must be applied to commercial industry - - where can speed substitute for mass (the large slow ships sailing the worlds oceans). Perhaps it starts with Coast wise shipping, or shuttle movements from major hub ports like Freeport in the Bahamas to US East Coast ports, cross channel operations, intra theater shipments in areas of the world where the land transportation is not appropriate but speed is a consideration - - the Pacific region - - Australia's deployment to East Timor. There are areas of the world where speed and agility may be appropriate.

Future: CCDoTT must continue to serve as a catalyst and stimulate the thinking about what is possible, challenge the status quo, continue to do exploratory work, leverage technology and champion the vision. The work being done here is transferable between military and commercial applications. Our challenge is to sustain the momentum and build the body of knowledge so essential to achieving the vision - - to leverage advance transportation technology including US built high-speed vessels and agile ports and terminal systems to solve defense and commercial transportation problems. (Reflect back.) It all started here and CCDoTT has had a significant impact on the future technologies and direction of the Global Transportation System.