

SUPPLY CHAIN SYNCHRONIZATION: IMPROVING DISTRIBUTION VELOCITY FROM THE UNITED STATES TO IRAQ

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ABSTRACT

Since the beginning of the conflict in Afghanistan in 2001, the Department of Defense's (DoD) use of commercial cargo aircraft has skyrocketed. From 1997 to 2001 DoD contracts awarded to carriers participating in the Civil Reserve Air Fleet averaged \$500 million annually [1, p. 4]. The period 2002-2006 saw that total jump to an average of \$2.1 billion a year; a 400% increase [1, p. 4]. But with the United States in the midst of a global recession, future defense spending is likely to shrink significantly. Also on the horizon is a drawdown of troops in Iraq as the conflict draws to a close. A Congressional Budget Office report on the future utilization of the Civil Reserve Air Fleet alluded to this projected slowdown in a 2007 report, stating that the fixed-buy portion of contracted movements would likely drop to levels considerably lower than those existing prior to the conflicts in the Middle East [1, p. 1]. Considering that significant portions of sustainment cargo flow from the United States to the theatre of operations via commercial contract carriers, the impact of this drawdown could be significant. As the availability of commercial contract airlift shrinks, every effort must be made to ensure that each contracted sortie is fully utilized. Inefficiency in collaborative planning and information sharing across the supply chain previously masked by the quantity of airlift available will quickly become apparent as dollars for contract airlift dwindle. Efforts to encourage collaboration and information sharing across the DoD supply chain should be undertaken in order to increase efficiency and obtain optimal cargo velocity across the enterprise.

An Air Mobility Command (AMC) and Defense Logistics Agency (DLA) supply chain improvement initiative was recently undertaken with the goal of increasing cargo velocity from the United States to Iraq. The initiative seeks to synchronize the picking, packing, and shipping of cargo at the warehouse in Susquehanna, Pennsylvania with the flow of scheduled commercial contract airlift through Dover AFB, Delaware. The goal of the initiative is to reduce the amount of time cargo sits idle at the airport awaiting airlift. In theory, as cargo build-up is synchronized with the airlift schedule, larger groups of homogeneous pallets bound for the same location should materialize. This in turn, results in more efficient scheduling of airlift at downstream transship nodes. An analysis of historical pallet movement was accomplished within the context of the initiative's methodology to determine if *pallet group size* was a significant factor in determining *total time enroute* for pallets bound from the Defense Logistics Agency warehouse in Susquehanna, Pennsylvania to Aerial Ports of Delivery (APODs) in Iraq. Using archived data from command, control, and planning systems, 1257 pallets were tracked from Dover Air Force Base (AFB), Delaware to various APODs in Iraq. Average port hold times for transship locations and total time enroute were calculated. Multiple regression models were tested to determine if a significant relationship existed between pallet group size and total time enroute.

Analysis suggested that no significant relationship exists between pallet group size and total time enroute. This implies that efforts to consolidate pallets at upstream locations in order to facilitate downstream efficiencies have limited effectiveness when not part of a larger effort to synchronize

planning efforts across the entire supply chain. For the population of pallets analyzed, the most significant relationship observed was between total time enroute and port hold time at Incirlik Air Base (AB), Turkey. A recommendation was made to continue the initiative and expand it to include information sharing with Incirlik AB in order to increase the probability of success.

REFERENCES

- [1] Congressional Budget Office. "Issues Regarding the Current and Future Use of the Civil Reserve Air Fleet." *Congressional Budget Office*. October 2007.