A–TCOP: Clearing the Fog

BY BRANDON J. DAUPHINAIS

The ARCENT–Theater Common Operating Picture integrates logistics data from multiple sources and provides metric insights, leading to better, faster, and more relevant decisions.

Throughout history, Soldiers have had to overcome harsh weather conditions while fighting for victory on the battlefield. To succeed, armies have had to adapt to and overcome the obstacles in their way, including heavy rain, thick fog, sandstorms, and hail. Yet, the physical battlefield is not the only terrain with obstacles to overcome.

In his article entitled "Clausewitz's Theories of Fog and Friction of War: Are they Obsolete in the Realities of the Computer Age?" in the November–December 2010 issue of *Armor*, Major Aaron B. Dixon stated, "Cyberspace contains its own virtual weather system." By extension, the "weather system" of the electronic battlefield has its own harsh conditions.

Layers of the Fog

U.S. Army Central (ARCENT) experienced the "weather" elements of the electronic battlefield when it tried to create a consolidated, timely, and accurate picture of logistics operations in a theater common operating picture. It faced numerous problems that collectively created a digital "fog" that obscured and reduced logistics operations visibility in theater. The three primary issues that limited visibility were information gaps among tactical and strategic levels, inefficiencies with manually generated data, and breakdowns in reporting.

The first layer of the fog was the information gap between the tactical and strategic levels of command. At higher level commands, the products and reports needed for maintaining visibility of logistics actions on the ground required that the data pulled from a number of automated systems and manual sources be received in a specific format. Inevitably, many of the data sources did not provide data in the correct format, and an ad-hoc process (either manual or automated) had to be created to bridge the format issue between the two levels. This slowed down the higher level command's ability to integrate the data it needed for visibility of operations under its command.

The next layer of fog that ARCENT faced was the inefficiencies with manually generated logistics reports. Part of the tactical-to-strategic logistics reporting gap was based on the fact that tactical-level groups often generated their reports using manual processes. The tactical-level commands' manual data products were delivered by email in the form of Microsoft Excel spreadsheets or PowerPoint presentations.

Furthermore, gathering the data from the tactical-level commands, each with its own unique format that could change over time, created a dampening effect on the desire to share or aggregate data, thus making the task of pulling this information together very difficult.

Another issue with the manually generated reports was that these data products were rarely centrally archived for future analysis; consequently, researching and analyzing the data for an immediate need was highly problematic, if not impossible. The lack of a central data archive reduced the ability of the command staff to establish trends and patterns for the data because the only archive, if one existed, was on an individual's computer and not in a location accessible by higher commands.

The final layer in the fog that reduced logistics operations visibility was breakdowns in reporting. Reporting periods were not synchronized across all the data sources, thus causing issues with data from one source becoming out of date before related data from other sources were submitted. This was further complicated by the fact that many of the data sources did not have validation procedures to ensure data quality, resulting in incomplete or inconsistent data. Therefore, additional time and effort were needed for data integration, which delayed critical command decisions and affected the Army's ability to sustain the fight.

Clearing the Fog

To overcome these three problems and disperse the fog created by inconsistent and untimely data, ARCENT's G–4 Logistics Automation Branch created the ARCENT–Theater Common Operating Picture (A–TCOP). Using a proven business intelligence model, this system addresses the problems affecting the command's ability to see the logistics picture within theater by integrating data, closing the information gap between the tactical and strategic levels, and enabling rapid implementation of business processes.

One of the primary ways A–TCOP overcomes the is-

sues facing ARCENT is by using data located in multiple authoritative data systems of record and combining them with numerous manually fed data sources located on both classified and unclassified networks. The data integrated from the manually fed sources are validated by comparing them with authoritative source records, thereby providing a snapshot of the logistics TCOP. The integration of Standard Army Management Information System (STAMIS) data with the manually generated tactical information increases the usefulness of STAMIS information. Discrepancies in reporting can be found through the automated comparison of data from multiple sources.

The integration of the data into one system also allows for complex analyses of the various systems' data. This provides an opportunity for complete logistics information snapshots that were previously unavailable elsewhere.

A–TCOP further disperses the fog by eliminating the information gap between the tactical and strategic levels. As a result of the data integration, high-level commands now gain drill-down capability with the consolidated data made available within A–TCOP. This allows them not only to have a high-level view but also to dig down to the root of the problem should an issue be identified.

By seeing logistics information from lower echelons, strategic commands are empowered to create more accurate predictive analyses and improve their ability to support Soldiers. By serving as the sole data reporting terminal, A–TCOP also ensures that command decisions are consistent and not based on contradictory information. (Data are verified and synchronized after being compiled from the various sources.)

Finally, A–TCOP enables the rapid implementation of business processes. As an analytical tool, A–TCOP can quickly evolve with Army and theater operation policies as they change. Changes to business processes and rules are applied directly upon implementation to A–TCOP's business model, and the effects are seen immediately by the personnel accessing A–TCOP. This eliminates downtime between command decisions and operation execution and allows the command group to rapidly adapt their business processes to the evolving logistics operations situation in theater.

An added benefit is that, because A–TCOP captures the business process rules, it ensures that they are not lost in the transitions of troop rotations. Prior to their deployments, personnel rotating into theater can review, on both secure and unsecure networks, the theater operations applicable to their upcoming duties, and they can quickly integrate themselves into theater operations once deployed.

Business Intelligence

A–TCOP brings the power of business intelligence to bear on the many data sources being used in order to show a clearer picture of what the data represent. Logistics data sources typically include national data resources, such as the Logistics Information Warehouse, Army War Reserve Deployment System, Worldwide Port System, and Intra-Theater Airlift Request System. Authoritative agents of business processes that do not currently have an automated system may generate their own "homegrown," nonstandard repository of data using common office automation tools like Microsoft Excel and Access and include that database in the A–TCOP data warehouse.

ARCENT first built a data warehouse by aggregating the Task Force Organization and Property Book Unit Supply Enhanced data sources with manually entered information. The data sources are woven together by establishing relationships that would logically link them. This process uses business intelligence to apply appropriate business rules to construct a congruent, understandable dataset. As data sources are identified, they can be incorporated into the model in the same fashion. This approach supports an ever-expanding and constantly improving business intelligence model.

A–TCOP improves logistics operations by providing metric insights that lead to better, faster, and more relevant decisions and provide capabilities for advanced analysis, self-service reporting, end-user analysis, and performance management at the strategic, tactical, and operational levels.

By providing visibility of resources and equipment in theater, A–TCOP has enabled the decisionmakers at ARCENT and throughout the Afghanistan Combined Joint Operations Area to get Soldiers what they need. A–TCOP has cleared the fog created by stovepiped systems and a lack of visibility across theater by giving clarity to requirements, sourcing options, and equipment losses. These changes enabled ARCENT to more effectively execute the drawdown in Iraq as part of Operation New Dawn.

With these accomplishments, A–TCOP gives the Army the ability to see through the fog and maintain visibility of logistics in the middle of the fight. That ability can often mean the difference between success and failure.

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